Bristol-Myers Squibb Manufacturing Company

RCRA Corrective Action Program
Quarterly Progress Report No. 67
2nd Quarter 2017

Bristol-Myers Squibb Manufacturing Company
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1.0 Introduction

Bristol-Myers Squibb Manufacturing Company (BMSMC) is currently implementing a Resource Conservation and Recovery Act (RCRA) Corrective Action Program at its pharmaceutical manufacturing facility located in Humacao, Puerto Rico. The program is being conducted in accordance with the provisions of Module III of BMSMC's Final RCRA Hazardous Waste Treatment and Storage Permit No. PRD090021056.

This Quarterly Progress Report has been prepared in accordance with the provisions of Module III, Condition B.8 (a) of the Permit. The report covers the period April 1, 2017 through June 30, 2017. All available information required by Condition B.8 (a)(i) through (viii) is provided below.[1]

The RCRA Corrective Action Program addresses three solid waste management units (SWMUs) at which impacts to soil and/or groundwater have been detected. The status of the corrective action program at each SWMU is briefly described below.

1.1. Former Underground Tank Farm (SWMU #3)

The Former Tank Farm (FTF) area consisted of 26 underground storage tanks for the storage of raw materials, kerosene and spent solvents for reclamation. BMSMC submitted a Corrective Measure Study (CMS) Report to United States Environmental Protection Agency (USEPA) in June 2007 that documented the improving groundwater quality and provided recommendations for the Final Corrective Measure. An updated CMS report was submitted to the USEPA in July 2011.

BMSMC conducted quarterly groundwater sampling at seven wells at this SWMU from March 2000 to December 2010 as part of the site-wide monitoring program. On March 12, 2010, BMSMC submitted a request for a permit modification to reduce the groundwater monitoring program. Based on USEPA comments, BMSMC submitted a revised request for a permit modification to the USEPA on July 20, 2010. BMSMC received approval for the permit modification from the USEPA on December 29, 2010. The reduction in groundwater monitoring as detailed in the permit modification was initiated during the March 2011 groundwater sampling event. As per the permit modification, monitoring wells at SWMU #3 are sampled semiannually. Semiannual sampling started with the March 2011 sampling event.

Monitoring wells MW-17 and MW-18, installed during the 2011 Supplemental Field Investigation, were sampled on a voluntary basis from June 2011 to June 2012. A request to include monitoring wells MW-17 and MW-18 into the SWMU #3 groundwater monitoring

[1] A PDF version of the complete Quarterly Progress Report No. 67 including cover letter, text, tables, figures, and appendices is provided on the back cover of this document.

network was included in the Class 2 Permit Modification Request filed with the USEPA on May 16, 2012. On August 14, 2012, BMSMC received approval for the Class 2 Permit Modification incorporating monitoring wells MW-17 and MW-18 into the groundwater monitoring network. Monitoring wells MW-17 and MW-18 were incorporated into the groundwater monitoring network beginning with the September 2012 groundwater sampling event.

A new monitoring well, MW-19, was installed in the Former Underground Tank Farm Area during the Release Assessment Phase 1 Field Program. Installation of this well was proposed by BMSMC in the July 2015 response to USEPA Comments on the 2011 CMS.

1.2. Former Brule Incinerator (SWMU #9)

This SWMU is the site of a former hazardous waste incinerator. The interim corrective measure (ICM) consisted of excavation of petroleum impacted soil. The *Interim Corrective Measure Implementation Report* was submitted to USEPA in February 2002. This report was approved by USEPA in a letter dated March 28, 2002.

A new monitoring well, BR-4, was installed in the Brule area during the Release Assessment Phase 1 Field Program. Installation of this well was proposed by BMSMC in the July 2015 Response to USEPA Comments on the 2011 CMS.

1.3. Building 5 Area (SWMU #20)

This SWMU encompasses an area adjacent to and east of Building 5. BMSMC submitted a revised CMS Report to USEPA in June 2007 that provided recommendations for the Final Corrective Measure. The recommended corrective measure included a combination of source area excavation and Monitored Natural Attenuation (MNA). An updated CMS report was submitted to the USEPA in July 2011.

BMSMC implemented an Interim Corrective Measure (ICM) to address source area soils in the Building 5 Area. The ICM Work Plan, which included four phases of excavation, treatment, and reuse or offsite disposal of impacted soil, was submitted to USEPA in September 2003 and approved by USEPA in December 2004. Four phases of soil excavation and treatment were conducted between 2006 and 2011 during which approximately 7,400 cubic yards of soil was excavated and treated. Each of the excavation areas (Phase 1 through Phase 4; designated as Areas A through D) are shown on **Figure 1**.

On August 14, 2012, BMSMC received approval for a Class 2 Permit Modification for Temporary Authorization to operate a temporary unit (TU) for the ex-situ treatment of contaminated soil excavated from Area E and the remaining unexcavated soil from Area D that was left in place during the ICM. In addition, the USEPA approved the May 2012 *Temporary Unit Operations and Maintenance Plan* (O&M Plan) and the May 2012 *Building 5 Area Interim*

Corrective Measure Work Plan Area E. Area E ICM soil removal activities were conducted from February 6, 2013 through March 2, 2013. Approximately 1,728 cubic yards of impacted soil were removed and placed into the Biopile for treatment. The Area E excavation area is shown on **Figure 1**.

BMSMC conducted quarterly groundwater sampling at the SWMU #20 from March 2000 to December 2010 as part of the site-wide monitoring program. As per the December 2010 approved permit modification, BMSMC initiated a reduced groundwater monitoring program in March 2011. The reduced groundwater monitoring program includes quarterly sampling at seven wells and semiannual sampling at 13 wells. Semiannual sampling was initiated in March 2011. Semiannual samples are collected in March and September.

On August 14, 2012, BMSMC received approval for the Class 2 Permit Modification to reactivate monitoring well D-1. Semiannual sampling of monitoring well D-1 was initiated in September 2012.

On March 13, 2013, BMSMC received conditional approval of the Class 2 Permit Modification Request for the closure of three existing monitoring wells (G-1R2, D-1, and E-1) and the installation of three replacement monitoring wells (G-1R3, D-1R, and E-1R). Conditional approval of the Class 2 Modification Request was granted pending a determination that replacement well G-1R3 complies with the objectives of the groundwater monitoring program and effectively captures the Building 5 COCs.

On September 18, 2013, BMSMC, in response to the conditional approval of the March 13, 2013 Class 2 Permit Modification Request, submitted a technical memorandum to the USEPA demonstrating the effectiveness and adequacy of the replacement monitoring wells D-1R, E-1R, and G-1R3 to capture the Building 5 COCs.

On May 5, 2014, BMSMC submitted a Class 1 Permit Modification requesting an extension of 45 days to remove hazardous soil, and the remaining non-hazardous soil that met the cleanup criteria as provided in BMSMC Permit Temporary Unit Operations and Maintenance Plan, beyond the previously permitted 90 day removal period.

On June 19, 2014, BMSMC received final approval of the Class 2 Permit Modification Request for the closure of three existing monitoring wells (G-1R2, D-1, and E-1) and the installation of three replacement monitoring wells (G-1R3, D-1R, and E-1R).

On November 14, 2014, BMSMC received conditional approval of the *Building 5 Soil Vapor Investigation Work Plan*. The Work Plan was conditionally approved by the USEPA pending the receipt of a revised Work Plan that addressed minor comments within 45 days of the approval letter. The revised Work Plan was submitted to the USEPA on December 4, 2014.

On February 23, 2015, BMSMC received Comments on the Building 5 Area Source Removal Phase 5 Implementation Report from the USEPA. The comment letter stated that BMSMC must submit a revised *Building 5 Area Source Removal Phase 5 Implementation Report* within 45 days of February 23, 2015. The revised *Building 5 Area Source Removal Phase 5 Implementation Report* was submitted to the USEPA on April 8, 2015.

A new monitoring well pair, S-39S/S-39D, and a deep monitoring S-35D paired with existing shallow monitoring well S-35S, were installed in the Building 5 Area during the Release Assessment Phase 1 Field Program. Installation of these wells was proposed by BMSMC in the March 2016 *Release Assessment Sampling and Analysis Plan*.[2]

1.4. Site-Wide

On March 14, 2013, BMSMC received the approved USEPA RCRA Permit Application Technical and Administrative Completeness Determination Letter for the May 2010 RCRA Part B Permit Application.

On February 26, 2015, BMSMC received Comments on the Corrective Measures Study Report (July 2011) from the USEPA. In the comment letter, the USEPA stated that BMSMC must submit a revised *Corrective Measures Study Report* within 60 days of February 26, 2015.

- On June 3, 2015, BMSMC received a letter from the USEPA that granted a time extension to respond to the Comments on the Corrective Measures Study. In the time extension letter, the USEPA granted a time extension until July 24, 2015 for the submittal of a revised *Corrective Measures Study Report.*

- On July 22, 2015, BMSMC submitted the *Response to USEPA Comments on July 2011 CMS Report* to the USEPA. The Response to USEPA Comments proposed additional work in each of the three SWMUs (FTF, Brule, and Building 5 Areas) to address USEPA comments on the July 2011 CMS.

On January 27, 2016, BMSMC submitted a Release Notification Letter to the USEPA that identified certain constituents present in groundwater that are currently not included under the Corrective Action Program.

On February 26, 2016, BMSMC submitted a *Release Assessment Report* to the USEPA that identified specific constituents as new compounds of potential concern (COPCs) in the site's SWMUs.

[2] In the July 2015 Response to USEPA Comments on the 2011 CMS, this location was initially targeted for a direct push soil boring only.

- On September 22, 2016, BMSMC received comments from the USEPA on the February 2016 *Release Assessment Report*.

- On October 3, 2016, BMSMC requested a 30-day time extension to respond to the September 22, 2016 USEPA comments on the February 2016 *Release Assessment Report*. The USEPA granted BMSMC an extension for the submittal of the Response to Comments to November 21, 2016.

- On November 21, 2016, BMSMC submitted the *Final Release Assessment Report* to the USEPA. The *Final Release Assessment Report* included BMSMC's Responses to Comments to the February 2016 Release Assessment Report as Attachment A.

- The USEPA approved the *Final Release Assessment Report* on April 7, 2017.

On March 25, 2016, BMSMC submitted a *Release Assessment Sampling and Analysis Plan*, including an updated *Quality Assurance Project Plan* (QAPP), to complete an onsite groundwater and soil investigation to evaluate potential release(s) of COPCs.

- On September 22, 2016, BMSMC received comments from the USEPA and the Puerto Rico Environmental Quality Board (PREQB) on the March 2016 *Release Assessment Sampling and Analysis Plan.*

- On October 3, 2016, BMSMC requested a 30-day time extension to respond to comments on the *Technical Review of March 2016 Release Assessment Sampling and Analysis Plan.*

- On October 27, 2016, USEPA granted BMSMC an extension for the submittal of the Response to Comments to November 21, 2016.

- On November 21, 2016, BMSMC submitted the *Response to Technical Review of March 2016 Release Assessment Sampling and Analysis Plan* (Attachment 1).

- On June 27, 2017, BMSMC received comments from the USEPA and PREQB on the *Technical Review of the Responses to Comments on the March 2016 Release Assessment Sampling and Analysis Plan*.

On June 14, 2016, BMSMC submitted a *Release Assessment Phase 2A Sampling and Analysis Plan: Offsite Groundwater – South of Facility*, including an updated QAPP, to complete a groundwater investigation to evaluate the potential offsite migration of COPCs in groundwater to the south and southeast of the BMSMC facility.

- On September 22, 2016, BMSMC received comments from the USEPA and the PREQB on the June 2016 *Release Assessment Phase 2A Sampling and Analysis Plan: Offsite Groundwater – South of Facility*.

- On October 3, 2016, BMSMC requested a 30-day time extension to respond to comments on the *Technical Review of the June 2016 Release Assessment Phase 2A Sampling and Analysis Plan: Offsite Groundwater – South of Facility*.

- On October 27, 2016, USEPA granted BMSMC an extension for the submittal of the Response to Comments to November 21, 2016.

- On November 21, 2016, BMSMC submitted the *Response to Technical Review of the June 2016 Release Assessment Phase 2A Sampling and Analysis Plan: Offsite Groundwater – South of Facility* (Attachment 2).

On August 5, 2016, BMSMC submitted a Preliminary *Notification of Possible Offsite Groundwater Contamination* in accordance with Module III.B.10.a of the Facility RCRA Part B Permit. The Preliminary Notification letter identified the possible offsite migration of low levels of COPCs that exceed background levels under the Ciudad Cristiana community.

On September 7, 2016, BMSMC submitted the *Release Assessment Phase 1 Technical Memorandum* to the USEPA, which presented the findings of the completed Phase 1 groundwater and soil investigation.

- On March 16, 2017, BMSMC received comments from the USEPA and the PREQB on the *Release Assessment Phase 1 Technical Memorandum*, September 2016.

- On May 15, 2017, BMSMC submitted the *Final Release Assessment Phase 1 Technical Memorandum* which also included a response to USEPA and PREQB comments as Attachment A.

On September 7, 2016, BMSMC submitted the *Supplemental Vapor Intrusion Investigation Report Buildings 7, 8, 15, 18, 30, 42* to the USEPA, which presented the findings of the completed vapor intrusion investigations at Buildings 7, 8, 15, 18, 30, and 42.

On September 9, 2016, BMSMC submitted a *Notification of Possible Offsite Groundwater Contamination* in accordance with Module III.B.10.a of the Facility RCRA Part B Permit. The Notification letter confirmed the offsite migration of low levels of COPCs that exceed background levels under the Ciudad Cristiana residential community.

On September 22, 2016, BMSMC received notification that BMSMC's 2015 *Hazardous Waste Minimization Plan* was found to be in accordance with the Facility RCRA Part B Permit.

On October 17, 2016, BMSMC submitted the *Release Assessment, Phase 2A: Offsite Groundwater – South of Facility Technical Memorandum* to the USEPA. The Phase 2A Technical Memorandum presented the findings of the completed Phase 2A groundwater investigation.

On November 2, 2016, BMSMC received comments from the USEPA on the *RCRA Corrective Action Program Quarterly Progress Report No. 62, 1st Quarter 2016*.

- On December 16, 2016, BMSMC submitted the *Response to EPA Comments on the RCRA Corrective Action Program Quarterly Progress Report No. 62, 1st Quarter 2016* to the USEPA.

- On March 16, 2017, BMSMC received an acceptance of the December 2016 *Response to EPA Comments on the RCRA Corrective Action Program Quarterly Progress Report No. 62, 1st Quarter 2016* from the USEPA and PREQB.

- On May 15, 2017, BMSMC submitted *RCRA Corrective Action Program Quarterly Progress Report No. 62, 1st Quarter 2016 (Revised May 15, 2017)* including a new Attachment A incorporating USEPA and BMSMC correspondence relating to Progress Report No. 62.

On November 21, 2016, BMSMC submitted the *Technical Memorandum Proposed Sampling Program Offsite Groundwater – South of Facility* to the USEPA. This document specifically addressed the USEPA's comments on the June 2016 *Release Assessment Phase 2A Sampling and Analysis Plan: Offsite Groundwater – South of Facility* (previously noted) regarding the reduced target analyte list for offsite monitoring wells installed during the Phase 2A Field Program.

- On March 16, 2017, BMSMC received comments from the USEPA and the PREQB on the *Technical Memorandum Proposed Sampling Program Offsite Groundwater – South of Facility*, November 2016.

- On May 15, 2017, BMSMC submitted a *Response to Comments to the Technical Review of the Technical Memorandum Proposed Sampling Program Offsite Groundwater – South of Facility*.

On January 6, 2017, BMSMC submitted the *Onsite Surface Soil Sampling Plan*, including updated QAPP worksheets to evaluate potential impacts to surface soil associated with the Former Tank Farm Area, Former Brule Incinerator Area, and Building 5 Area. The collection of background surface soil samples was also proposed in the *Onsite Surface Soil Sampling Plan*.

- On June 12, 2017, BMSMC received comments from the USEPA and PREQB on the January 6, 2017 *On-Site Surface Soil Sampling and Analysis Plan.*

On January 13, 2017, BMSMC submitted the *Release Assessment Investigation Treatability Testing Work Plan* to undertake pre-design data collection to support evaluation of potential remedial technologies for preventing downgradient migration of COPCs.

- On June 12, 2017, BMSMC received comments from the USEPA and the PREQB on the *Release Assessment Investigation Treatability Testing Work Plan*.

On January 16, 2017, BMSMC submitted the *Phase 2C Release Assessment Potential Preferential Pathway Evaluation Sampling and Analysis Plan* to determine if subsurface utilities (e.g., bedding material and/or potential for infiltration) located downgradient of the facility are acting as potential preferential pathways for contaminant transport. In addition, the *Phase 2C Release Assessment Potential Preferential Pathway Evaluation Sampling and Analysis Plan* proposed the installation of test pits and additional monitoring wells to delineate the extent of 1,4-Dioxane impacts in groundwater adjacent to subsurface utilities located along State Road No. 3.

- On June 12, 2017, BMSMC received comments from the USEPA and PREQB on the January 16, 2017 *Phase 2C Release Assessment Potential Preferential Pathway Evaluation Sampling and Analysis Plan*.

On February 13, 2017, BMSMC submitted the December 2016 offsite groundwater laboratory technical reports and data validation packages (Release Assessment Phase 2A wells) to the USEPA.

On March 16, 2017, BMSMC received comments from the USEPA and the PREQB on the *RCRA Corrective Action Program Quarterly Progress Report No. 63, 2nd Quarter 2016.*

- On May 15, 2017, BMSMC submitted a *Response to Comments to the Technical Review RCRA Corrective Action Program Quarterly Progress Report No. 63 2nd Quarter 2*016 to the USEPA.

On May 16, 2017, BMSMC received comments from the USEPA and the PREQB on the *RCRA Corrective Action Program Quarterly Progress Report No. 65, 4th Quarter 2016.*

- On June 14, 2017, BMSMC submitted a *Response to Comments to the Technical Review RCRA Corrective Action Program Quarterly Progress Report No. 65 4th Quarter 2*016 to the USEPA. Revised tables and data validation packages were included in the submittal.

On June 14, 2017, BMSMC submitted *Quarterly Progress Report No. 64 3rd Quarter 2016 Revised Tables and Updated Data Validation Packages* to the USEPA. BMSMC had committed to revising Quarterly Progress Reports No. 64, No. 65, and No. 66 based on data validation comments from USEPA on Quarterly Progress Report No. 63.

On June 14, 2017, BMSMC submitted *RCRA Corrective Action Program Quarterly Progress Report No. 66 1st Quarter 2017 Revised Tables and Updated Data Validation Packages* to the USEPA. BMSMC had committed to revising Quarterly Progress Reports No. 64, No. 65, and No. 66 based on data validation comments from USEPA on Quarterly Progress Report No. 63.

On June 27, 2017, BMSMC received comments from the USEPA and PREQB on the *Technical Review April 2017 Corrective Action Program Quarterly Progress Report No. 66 – 1st Quarter 2017.*

On June 30, 2017, BMSMC submitted the March 2017 offsite groundwater laboratory technical reports and data validation packages (Release Assessment Phase 2A wells) to the USEPA.

2.0 Description of Work Completed

A description of corrective action activities completed between April 1, 2017 and June 30, 2017 is presented in this section.

2.1. Site-Wide

2.1.1. Groundwater Elevation Monitoring

Groundwater elevations were collected on May 5, 2017 and May 29, 2017. Groundwater elevations measured on May 5, 2017 were collected as part of the monthly groundwater elevation monitoring at each offsite monitoring well and each onsite perimeter monitoring well. Groundwater elevations measured on May 29, 2017 were collected as part of the 2nd Quarter 2017 groundwater sampling event and included all onsite and offsite monitoring wells.

Results of the groundwater elevation monitoring data collected since July 2016 are provided in **Table 1**.

2.1.2. Release Assessment Phase 1 Program

Results of the 1st Q 2017 groundwater samples collected from monitoring wells installed during the Release Assessment Phase 1 Field Program were validated in accordance with USEPA Region 2 guidelines. Phase 1 Release Assessment monitoring well locations are shown on **Figure 2**. The laboratory analytical results and data validation reports are provided on CD in **Attachment A**. Field data sheets are included on CD in **Attachment B**.

The 2nd Q 2017 groundwater sampling event was conducted in June 2017. This was an expanded groundwater sampling event and included each of the monitoring wells installed during the Phase 1 Release Assessment Field Program (MW-21S, MW-22S, MW-23S, RA-10S, RA-10D,

MW-20D, MW-20S, S-40D, S-40S, S-41D, S-41S, S-42D, S-42S, S-43D, and S-43S). Groundwater samples were analyzed for the following parameters:

- Target compound list (TCL) Volatile Organic Compounds (VOCs) plus Tetrahydrofuran, p-Isopropyl Toluene, 1,2,4-Trimethylbenzene, 1,3-Butadiene, Benzyl Chloride, tert-Butyl Alcohol, and tert-Amyl Alcohol according to SW-846 Method 8260C;

- TCL Semivolatile Organic Compounds (SVOCs) plus 1-Methylnaphthalene and 2-Methylnaphthalene, according to SW-846 Method 8270D;

- Naphthalene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, Indeno(1,2,3)pyrene, and 1,4-Dioxane according to SW-846 Method 8270D with Selective Ion Monitoring (SIM);

- Low Molecular Weight (LMAs) according to SW-846 Method 8015C by direct aqueous injection (DAI);

- TCL Organochlorine Pesticides according to SW-846 Method 8081B;

- Volatile Petroleum Hydrocarbons (VPH) according to Massachusetts Department of Environmental Protection (MADEP) VPH-Revision 1.1; and

- Extractable Petroleum Hydrocarbons (EPH) according to MADEP EPH Revision 1.1.

Results from the 2nd Q 2017 sampling event will be included in the 3rd Q 2017 Progress Report (October 2017).

2.1.3. Release Assessment Phase 2A Program

Results of the 1st Q 2017 groundwater samples collected from monitoring wells installed during the Release Assessment Phase 2A Field Program were validated in accordance with USEPA Region 2 guidelines. Phase 2A Release Assessment monitoring well locations are shown on **Figure 3**. The laboratory analytical results and data validation reports are provided on CD in **Attachment A**. Field data sheets are included on CD in **Attachment B**.

The 2nd Q 2017 groundwater sampling event was conducted in June 2017. This was an expanded groundwater sampling event and included each of the monitoring wells installed during the Phase 2A Release Assessment Field Program (OSMW-1S, OSMW-1D, OSMW-2S, OSMW-2D, OSMW-3S, OSMW-3D, OSMW-4S, OSMW-4D, OSMW-5S, OSMW-5D, OSMW-6S, and

OSMW-6D). As requested by the USEPA, groundwater samples were analyzed for an expanded list of parameters and included the following:

- TCL VOCs plus Tetrahydrofuran, p-Isopropyl Toluene, 1,2,4-Trimethylbenzene, 1,3-Butadiene, Benzyl Chloride, tert-Butyl Alcohol, and tert-Amyl Alcohol according to SW-846 Method 8260C;
- TCL SVOCs plus 1-Methylnaphthalene and 2-Methylnaphthalene, according to SW-846 Method 8270D;
- Naphthalene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, Indeno(1,2,3)pyrene, and 1,4-Dioxane according to SW-846 Method 8270D with Selective Ion Monitoring (SIM);
- LMAs according to SW-846 Method 8015C by DAI;
- TCL Organochlorine Pesticides according to SW-846 Method 8081B;
- VPH according to MADEP VPH-Revision 1.1; and
- EPH according to MADEP EPH Revision 1.1.

Results from the 2nd Q 2017 sampling event will be included in the 3rd Q 2017 Progress Report (October 2017).

2.1.4. Phase 2C Potential Preferential Pathway Evaluation

Field implementation of the sewer bedding/utility assessment project along and adjacent to State Road No. 3 was conducted in April and May of 2017. In situ groundwater samples were collected from three test pits located adjacent to offsite sewers in the vicinity of the BMSMC facility. The location of the test pits is provided on **Figure 4**.

The in situ groundwater samples were collected in accordance with the *Phase 2C Release Assessment Potential Preferential Pathway Evaluation Sampling and Analysis Plan* (SAP). The samples were analyzed for 1,4-Dioxane. 1,4-Dioxane was selected as a surrogate tracer compound based on (1) review of the Phase 1 and Phase 2A groundwater data which identified 1,4-Dioxane as the one compound which was migrating offsite that was detected in multiple offsite monitoring wells at levels well above tap water RSLs, (2) the high mobility of 1,4-Dioxane in groundwater, and (3) 1,4-Dioxane's rapid attenuation downgradient of the facility southern perimeter boundary suggested the presence of a preferential groundwater flow pathway. The samples were validated according to USEPA Region 2 guidelines. The laboratory analytical

results and data validation reports are provided on CD in **Attachment A**. Field data sheets are included on CD in **Attachment B**.

In addition to the collection of the in situ groundwater samples from the test pits, a sewer infiltration assessment was conducted and six well pairs (OSMW-7S, OSMW-7D, OSMW-8S, OSMW-8D, OSMW-9S, OSMW-9D, OSMW-10S, OSMW-10D, OSMW-11S, OSMW-11D, OSMW-12S, and OSMW-12D) and one piezometer (OSPZ-1) were also installed. The locations of the Phase 2C monitoring wells are shown on **Figure 4**. **Attachment C** presents the soil boring logs and monitoring well construction details. In accordance with the SAP, the Phase 2C assessment will be submitted to the USEPA within 45 days of receipt of the data validation packages.

2.2. Former Tank Farm Area

Results of the 1st Q 2017 groundwater sampling event were validated in accordance with USEPA Region 2 guidelines. Locations of the groundwater monitoring wells are presented on **Figure 5.** The laboratory analytical results and data validation reports are provided on CD in **Attachment A.** Field data sheets are included on CD in **Attachment B**.

The 2nd Q 2017 groundwater sampling was conducted in June 2017. This was an expanded groundwater sampling event and included the FTF Area monitoring wells currently in the groundwater monitoring program (MW-3, MW-5, MW-7, MW-13, MW-14, MW-15, MW-16, MW-17, and MW-18), as well as upgradient monitoring well MW-9, and interior monitoring well MW-19 (installed during the Release Assessment Phase 1 Field Program).[3] Groundwater samples were analyzed for the following parameters:

- TCL VOCs plus Tetrahydrofuran, p-Isopropyl Toluene, 1,2,4-Trimethylbenzene, 1,3-Butadiene, Benzyl Chloride, tert-Butyl Alcohol, and tert-Amyl Alcohol according to SW-846 Method 8260C;
- TCL SVOCs plus 1-Methylnaphthalene and 2-Methylnaphthalene, according to SW-846 Method 8270D;
- Naphthalene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, Indeno(1,2,3)pyrene, and 1,4-Dioxane according to SW-846 Method 8270D SIM;
- LMAs according to SW-846 Method 8015C by DAI;

[3] Monitoring well MW-19 was installed during the Release Assessment Phase 1 Field Program to address USEPA comments on the 2011 CMS to further evaluate the presence of groundwater impacts within the FTF Area.

- VPH according to MADEP VPH-Revision 1.1; and
- EPH according to MADEP EPH Revision 1.1.

Results from the 2nd Q 2017 sampling event will be included in the 3rd Q 2017 Progress Report (October 2017).

2.3. Brule Area

Results of the 1st Q 2017 groundwater sampling event were validated in accordance with USEPA Region 2 guidelines. Locations of the groundwater monitoring wells are presented on **Figure 6.** The laboratory analytical results and data validation reports are provided on CD in **Attachment A.** Field data sheets are included on CD in **Attachment B**.

The 2nd Q 2017 groundwater sampling was conducted in June 2017. This sampling event included the collection of groundwater samples at monitoring wells BR-1, BR-2, and BR-3, as well as monitoring well BR-4 (installed during the Release Assessment Phase 1 Field Program).[4] Groundwater samples were analyzed for the following parameters:

- TCL VOCs plus Tetrahydrofuran, p-Isopropyl Toluene, 1,2,4-Trimethylbenzene, 1,3-Butadiene, Benzyl Chloride, tert-Butyl Alcohol, and tert-Amyl Alcohol according to SW-846 Method 8260C;
- TCL SVOCs plus 1-Methylnaphthalene and 2-Methylnaphthalene, according to SW-846 Method 8270D;
- Naphthalene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, Indeno(1,2,3)pyrene, and 1,4-Dioxane according to SW-846 Method 8270D SIM;
- LMAs according to SW-846 Method 8015C by DAI;
- VPH according to MADEP VPH-Revision 1.1; and
- EPH according to MADEP EPH Revision 1.1.

Results of the 2nd Q 2017 sampling event will be included in the 3rd Q 2017 Progress Report (October 2017).

[4] Monitoring well BR-4 was installed during the Release Assessment Phase 1 Field Program to address USEPA comments on the 2011 CMS to further evaluate petroleum hydrocarbon impacts in the Brule Area.

2.4. Building 5 Area

Results of the 1st Q 2017 groundwater sampling event were validated in accordance with USEPA Region 2 guidelines. Locations of the groundwater monitoring wells are presented on **Figure 7.** The laboratory analytical results and data validation reports are provided on CD in **Attachment A.** Field data sheets are included on CD in **Attachment B**.

The 2nd Q 2017 groundwater sampling event was conducted in June 2017. This was an expanded groundwater sampling event and included the Building 5 Area monitoring wells sampled quarterly (UP-1, A-1R4, A-2R2, G-1R3, S-31R2, S-32, and S-33), Building 5 Area monitoring wells sampled semiannually (E-1R, D-1R, S-29R, S-34, S-35, S-36, and UP-2), and Building 5 Area monitoring wells not currently in the groundwater monitoring program (S-28, S-30, S-37, S-38, and MW-11). In addition, monitoring wells S-35D, S-39S, and S-39D installed during the completion of the Release Assessment Phase 1 Field Program were also sampled during the 2nd Q 2017 groundwater sampling event. [5] Groundwater samples were analyzed for the following parameters:

- TCL VOCs plus Tetrahydrofuran, p-Isopropyl Toluene, 1,2,4-Trimethylbenzene, 1,3-Butadiene, Benzyl Chloride, tert-Butyl Alcohol, and tert-Amyl Alcohol according to SW-846 Method 8260C;
- TCL SVOCs plus 1-Methylnaphthalene and 2-Methylnaphthalene, according to SW-846 Method 8270D;
- Naphthalene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, Indeno(1,2,3)pyrene, and 1,4-Dioxane according to SW-846 Method 8270D SIM;
- LMAs according to SW-846 Method 8015C DAI;
- TCL Organochlorine Pesticides according to SW-846 Method 8081B;
- VPH according to MADEP VPH Revision 1.1; and
- EPH according to MADEP EPH Revision 1.1.

Results of the 2nd Q 2017 sampling event will be included in the 3rd Q 2017 Progress Report (October 2017).

[5] Monitoring wells S-35D, S-39S, and S-39D were installed during the Release Assessment Phase 1 Field Program to address USEPA comments on the 2011 CMS to further evaluate the presence of groundwater impacts within the Building 5 Area.

3.0 Summary of Findings

This section presents a summary of findings based on groundwater samples collected as part of the 1st Q 2017 groundwater monitoring program. In addition, results of the in-situ groundwater samples collected as part of the Phase 2C Field Program completed during the 2nd Quarter 2017 are discussed in this section.

3.1. Former Tank Farm Area

The 1st Q 2017 groundwater sample results from the FTF Area were compared to the USEPA May 2016 residential and industrial groundwater concentrations for vapor intrusion[6] and the Maximum Contaminant Levels (MCLs) or the June 2017 USEPA Regional Screening Levels (RSLs) for tap water in cases where MCLs have not been developed.[7] Groundwater sample results were also compared to the April 2016 Puerto Rico Water Quality Standards (PRWQS). Vapor intrusion screening levels, MCLs, the June 2017 RSLs for tap water, and the April 2016 PRWQS for the FTF Area COCs are provided in the table below.

Parameter	VI Groundwater Screening Levels (ug/L)[8]		Groundwater Screening Levels (ug/L)		
	Residential	Industrial	MCL	Tap Water	PRWQS
Acetone	18,000,000	77,000,000	---	14,000	---
MIBK	420,000	1,800,000	---	6,300	---
Chloromethane	230	960	---	190	---
Methylene Chloride	630	7,600	5	---	46
Xylenes (Total)	290	1,200	10,000	---	---

Validated groundwater analytical results for samples collected in the FTF Area during the March 2017 groundwater sampling event are presented in **Table 2.** Results are grouped by FTF Area COCs and COPCs, including other VOCs, LMAs, PAHs, VPH, EPH, SVOCs, and Organochlorine Pesticides, where available. USEPA and PRWQS groundwater screening levels are also provided in **Table 2**.

Xylene was the only FTF COC detected above its applicable groundwater concentration for vapor intrusion or groundwater screening levels. Xylene exceeded its residential and industrial

[6] The USEPA VISL Calculator has not been updated to incorporate the June 2017 RSLs.
[7] Residential based groundwater concentrations for vapor intrusion are presented for completeness purposes only. In the future, BMSMC plans to establish deed restrictions that limit site-use to industrial purposes and will subsequently manage the site using industrial-based screening levels.
[8] Groundwater screening levels for vapor intrusion have been adjusted for an average groundwater temperature of 30C.

groundwater concentration for vapor intrusion and its groundwater screening level. VOC COPCs detected above their respective groundwater screening level included 1,4-Dioxane, Dichlorodifluoromethane, Ethylbenzene, Methyl Tert Butyl Ether (MTBE), and tert-Amyl Alcohol. Dichlorodifluoromethane also exceeded its residential groundwater concentration for vapor intrusion. Ethylbenzene also exceeded its residential and industrial groundwater concentration for vapor intrusion. PAH COPCs detected above their respective groundwater screening level included 1-Methylnaphthalene, 2-Methylnaphthalene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a)anthracene, Indeno(1,2,3-cd)Pyrene, and Naphthalene. VPH fractions detected above their respective groundwater screening level included C9-C12 Aliphatics and C9-C10 Aromatics. C11-C22 Aromatics was the only EPH fraction detected above its screening level. Other than the PAHs noted above, 4-Chloroaniline was the only SVOC detected above its June 2017 tap water RSL. No LMAs were detected above their respective groundwater screening levels.

3.2. Former Brule Incinerator Area

The 1st Q 2017 groundwater sample results from the Former Brule Incinerator Area were compared to the USEPA May 2016 residential and industrial groundwater concentrations for vapor intrusion and the USEPA MCLs or the June 2017 USEPA RSLs for tap water in cases where MCLs have not been developed. Groundwater sample results were also compared to the April 2016 PRWQS.

Validated groundwater analytical results for samples collected in the Brule Area during the March 2017 groundwater sampling event are presented in **Table 3.** Results are grouped by analyte group (VOCs, LMAs, PAHs, VPH, EPH, and SVOCs). USEPA and PRWQS groundwater screening levels are also provided in **Table 3**.

No COPCs exceeded residential or industrial groundwater concentrations for vapor intrusion. 1,4-Dioxane was the only VOC COPC detected above its groundwater screening level. C9-C10 Aromatics was the only VPH fraction detected above its groundwater screening level. C11-C22 Aromatics was the only EPH fraction detected above its groundwater screening level. 4-Chloroaniline was the only SVOC COPC detected above its groundwater screening level. No LMAs or PAHs were detected above their respective groundwater screening levels.

3.3. Building 5 Area

The 1st Q 2017 groundwater sample results from the Building 5 Area were compared to the USEPA May 2016 residential and industrial groundwater concentrations for vapor intrusion and the USEPA MCLs or the June 2017 USEPA RSLs for tap water in cases where MCLs have not been developed. Groundwater sample results were also compared to the April 2016 PRWQS. Vapor intrusion screening levels, MCLs, the June 2017 RSLs for tap water, and the April 2016 PRWQS for the Building 5 Area COCs are provided in the table below.

Parameter	VI Groundwater Screening Levels (ug/l)		Groundwater Screening Levels (ug/L)		
	Residential	Industrial	MCL	Tap Water	PRWQS
Benzene	1.3	5.6	5	---	5
Ethylbenzene	2.6	12	700	---	530
Toluene	15,000	63,000	1,000	---	1,000
Xylenes (total)	290	1,200	10,000	---	---
Acetone	18,000,000	77,000,000	---	14,000	---
MIBK	420,000	1,800,000	---	6,300	---
Isopropyl Alcohol	450,000	1,900,000	---	410	---
Methanol	86,000,000	360,000,000	---	20,000	---

Validated groundwater analytical results for samples collected in the Building 5 Area during the March 2017 groundwater sampling event are presented in **Table 4.** Results are grouped by Building 5 Area COCs and COPCs, including other VOCs, LMAs, PAHs, VPH. EPH, SVOCs, and Organochlorine Pesticides. USEPA and PRWQS screening levels are also provided in **Table 4**.

The 1st Q 2017 groundwater sampling results identified the COCs Benzene, Ethylbenzene and Xylenes at concentrations in excess of vapor intrusion screening levels, MCLs or PRWQS. Vapor intrusion screening levels for one or more COCs were exceeded in in-plume wells A-1R4 (Benzene, Ethylbenzene, and Xylene), G-1R3 (Ethylbenzene and Xylene), S-31R2 (Ethylbenzene and Xylene), S-32 (Ethylbenzene and Xylene), and S-39S (Ethylbenzene and Xylene).[9] MCLs/PRWQS for one or more COCs were exceeded in in-plume wells G-1R3 (Ethylbenzene and Xylene), S-31R2 (Ethylbenzene), and S-32 (Ethylbenzene and Xylene).[10]

Methylene Chloride was the only COPC (S-32 only) that exceeded its residential groundwater concentration for vapor intrusion. No COPCs exceeded their industrial groundwater concentration for vapor intrusion. COPC VOCs detected above their respective groundwater screening level included methylene chloride, 1,4-Dioxane, MTBE, and tert-Amyl Alcohol. Naphthalene was the only PAH COPC detected above its groundwater screening level. VPH fractions detected above their respective groundwater screening level included C9-C10 Aromatics and C9-C12 Aliphatics. EPH fractions detected above their respective groundwater screening level included C11-C22 Aromatics and C9-C18 Aliphatics. Other than Naphthalene, no other SVOC COPCs were detected above their respective groundwater screening level. Organochlorine Pesticides detected above their respective groundwater screening level included

[9] Benzene exceeded only its residential groundwater concentration for vapor intrusion.
[10] Elevated levels of Xylene and Ethylbenzene were also detected at monitoring well S-39S, which is located near Frontera Creek, during several sampling events.

4,4'-DDE, alpha-Chlordane, Dieldrin, gamma-Chlordane, Heptachlor, and Heptachlor Epoxide. No LMAs were detected above their respective groundwater screening levels.

3.4. Release Assessment Phase 1 Program

The 1st Q 2017 groundwater sample results from the Release Assessment Phase 1 monitoring wells were compared to the USEPA May 2016 residential and industrial groundwater concentrations for vapor intrusion and the USEPA MCLs or the June 2017 USEPA RSLs for tap water in cases where MCLs have not been developed. Groundwater sample results were also compared to the April 2016 PRWQS.

Validated groundwater analytical results for samples collected in Release Assessment Phase 1 monitoring wells (MW-21S, MW-22S, MW-23S, RA-10S, RA-10D, MW-20D, MW-20S, S-40D, S-40S, S-41D, S-41S, S-42D, S-42S, S-43D, and S-43S) during the March 2017 groundwater sampling event are presented in **Table 5.** Results are grouped by analyte group (VOCs, LMAs, PAHs, VPH, EPH, SVOCs, and Organochlorine Pesticides). USEPA and PRWQS screening levels are also provided in **Table 5**.

VOC COPCs detected above their respective groundwater screening levels included 1,4-Dioxane, MTBE, and tert-Amyl Alcohol. 1,4-Dioxane was the only COPC that exceeded its residential groundwater concentration for vapor intrusion. C9-C10 Aromatics was the only VPH fraction detected above its groundwater screening level. C11-C22 Aromatics was the only EPH fraction detected above its groundwater screening level. 4,4'-DDT was the only Organochlorine Pesticide detected above its groundwater screening level. No SVOCs or LMAS were detected above their respective groundwater screening levels.

3.5. Release Assessment Phase 2A Program

The 1st Q 2017 groundwater sample results from the Release Assessment Phase 2A monitoring wells were compared to the USEPA May 2016 residential and industrial groundwater concentrations for vapor intrusion and the USEPA MCLs or the June 2017 USEPA RSLs for tap water in cases where MCLs have not been developed. Groundwater sample results were also compared to the April 2016 PRWQS.

Validated groundwater analytical results for samples collected in Release Assessment Phase 2A monitoring during the March 2017 groundwater sampling event are presented in **Table 6.** Results are grouped by analyte group (VOCs, PAHs, VPH, EPH, SVOCs, and Organochlorine Pesticides). USEPA and PRWQS screening levels are also provided in **Table 6**.

1,4-Dioxane was the only VOC COPC detected above its groundwater screening level in samples collected in the Release Assessment Phase 2A monitoring wells. No compound exceeded its

residential and industrial groundwater concentration for vapor intrusion.[11] No VPH, EPH, PAHs, SVOCS, or Organochlorine Pesticides were detected above their respective groundwater screening levels.

3.6. Phase 2C Potential Preferential Pathway Evaluation

As part of the sewer bedding/utility assessment, in situ groundwater samples collected from the test pits were analyzed for only 1,4-Dioxane and the results were compared to the USEPA May 2016 residential and industrial groundwater concentrations for vapor intrusion and the June 2017 USEPA RSLs for tap water. No MCL has been developed for 1,4-Dioxane and there are no Puerto Rico Water Quality Standards for this compound.

Validated groundwater analytical results for samples collected during the Phase 2C Potential Preferential Pathway Evaluation conducted in April - May 2017 are presented in **Table 7.** USEPA screening levels are also provided in **Table 7**.

The 1,4-Dioxane concentration in each of the in-situ groundwater samples was less than its residential and industrial groundwater concentration for vapor intrusion and greater than its tap water RSL.

4.0 Summary of Changes Made

The CMS program is currently under evaluation pending final field activities that may require the expansion of the program to other areas or SWMUs within the facility, and the integration of additional wells into the current Facility Groundwater Monitoring Program among other changes.

5.0 Summary of Public Participation Activities

No public meetings were held during the 2nd Quarter of 2017.

6.0 Summary of Problems Encountered

There were no problems encountered relating to the RCRA Corrective Action Program during this reporting period.

[11]Hexachlorobutadiene was listed as a detected VOC for sample OSMW-3S (FA41752-6) in the raw data section of the laboratory technical report. The listed Hexachlorobutadiene concentration (0.53 ug/l) exceeded its USEPA RSL and Residential Groundwater Concentration for Vapor Intrusion. A review of the laboratory QA/QC samples indicated Hexachlorobutadiene was also detected in the laboratory method blank (0.52 ug/l) associated with OSMW-3S. BMSMC subsequently requested the laboratory to report the Hexachlorobutadiene results for each sample in the FA41752. The reported concentration of Hexachlorobenzene for sample OSMW-3S was 0.53 JB. After data validation the Hexachlorobutadiene result for OSMW-3S was qualified as non-detect.

7.0 Changes in Personnel

There were no changes in personnel during this reporting period.

8.0 Projected Work for Next Reporting Period

Work scheduled to be performed during the three month period from July 1, 2017 through September 2017 is described in this section.

8.1. Site-Wide

The 2nd Q 2017 groundwater results for the Release Assessment Phase 1, Phase 2A, and Phase 2C monitoring wells will be validated.

The *Phase 2B Release Assessment Sampling and Analysis Plan – Frontera Creek* will be submitted to the USEPA during the 3rd Q 2017. It is anticipated field work will begin in 3rd Q / 4th Q 2017 dependent on site access and weather considerations.

Monthly depth to groundwater measurements will be collected in monitoring wells located along State Road No. 3. Results of the monthly depth to groundwater measurements will be presented in the next Quarterly Progress Report.

Monitoring wells installed during the Release Assessment Phase 1 Field Program will be sampled during the 3rd Q 2017 groundwater sampling event. These monitoring wells will be sampled for the same expanded list of analytical parameters that were sampled for in June 2017.

Monitoring wells installed during the Release Assessment Phase 2A Field Program will be sampled during the 3rd Q 2017 groundwater sampling event. These monitoring wells will be sampled for the same expanded list of analytical parameters that were sampled for in June 2017.

Monitoring wells installed during the Release Assessment Phase 2C Field Program will be sampled during the 3rd Q 2017 groundwater sampling event. These monitoring wells will be sampled for the same expanded list of analytical parameters that were sampled for in June 2017.

Activities related to hydrogeologic testing and groundwater treatability studies will continue during the 3rd Q 2017.

Semi-annual indoor air testing will be conducted at Building 30 in July 2017.

BMSMC will submit a Response to Comments to the *Technical Review of the January 6, 2017 On-Site Surface Soil Sampling and Analysis Plan* to the USEPA during the 3rd Q 2017.

BMSMC will submit a Response to Comments to the *Technical Review of the January 17, 2017 Phase 2C Release Assessment Potential Preferential Pathway Evaluation Sampling and Analysis Plan* to the USEPA during the 3rd Q 2017.

BMSMC will submit a Response to Comments to the *Technical Review of the January 13, 2017 Release Assessment Investigation Treatability Testing Work Plan* to USEPA during the 3rd Q 2017.

BMSMC will submit a Response to Comments to the *Technical Review of the Responses to Comments on the March 2016 Release Assessment Sampling and Analysis Plan*.

BMSMC will submit a Response to Comments to the *Technical Review April 2017 Corrective Action Program Quarterly Progress Report No. 66 – 1st Quarter 2017.*

8.2. Former Tank Farm Area

The 2nd Q 2017 groundwater results will be validated.

The 3rd Q 2017 quarterly groundwater sampling event will be conducted in September 2017. Monitoring wells will be sampled for the same expanded list of analytical parameters that were sampled in June 2017.

8.3. Brule Area

The 2nd Q 2017 groundwater results will be validated.

The 3rd Q 2017 quarterly groundwater sampling event will be conducted in September 2017. Monitoring wells will be sampled for the same expanded list of analytical parameters that were sampled in June 2017.

8.4. Building 5 Area

The 2nd Q 2017 groundwater results will be validated.

The 3rd Q 2017 quarterly groundwater sampling event will be conducted in September 2017. Monitoring wells will be sampled for the same expanded list of analytical parameters that were sampled in June 2017.

9.0 Additional Documentation

Additional documentation submitted to the USEPA during the period April 1, 2017 through June 30, 2017 included:

- On June 13, 2017 BMSMC submitted a *Revised Contained-In Determination Request* to the USEPA.

Tables

Table 1
Groundwater Elevation Data - January 2017 Through June 2017

Well ID	Measurement Date							
	7/27/2016	8/31/2016	10/17/2016	11/29/2016	1/30/2017	2/27/2017	5/5/2017	5/29/2017
	Groundwater Elevation (Feet MSL)							
Former Tank Farm Area								
MW-12	---	15.49	---	17.76	---	14.92	---	15.89
MW-13	---	15.93	---	17.75	---	15.26	---	15.70
MW-14	---	14.91	---	16.87	---	14.40	---	14.63
MW-15	---	14.29	---	16.36	---	13.87	---	14.28
MW-16	---	16.30	---	18.69	---	15.60	---	15.24
MW-17	---	14.90	---	17.11	---	14.32	---	14.32
MW-18	---	14.84	---	17.09	---	14.34	---	14.96
MW-19	---	14.10	---	16.26	---	13.53	---	14.48
MW-3	---	15.83	---	17.52	---	15.30	---	15.50
MW-5	---	15.20	---	19.31	---	14.54	---	14.60
MW-7	---	16.21	---	18.17	---	15.42	---	15.69
MW-9	---	16.62	---	17.79	16.83	15.54	---	15.78
RW-1	---	15.65	---	18.28	---	14.83	---	---
Former Brule Incinerator								
BR-1	---	14.16	---	16.38	---	13.79	---	14.02
BR-2	---	14.08	---	16.48	---	13.72	---	14.34
BR-3	---	14.17	---	16.45	---	13.73	---	14.54
BR-4	---	3.65	---	13.13	---	13.10	---	13.58
Building 5 Area								
A-1R4	---	14.07	---	15.61	---	12.91	---	13.69
A-2R2	---	13.72	---	16.47	---	12.99	---	13.35
D-1R	---	10.68	---	11.70	11.07	10.44	---	10.85
E-1R	---	10.88	---	12.73	---	10.45	---	11.01
G-1R3	---	13.91	---	16.32	---	11.60	---	11.87
MW-11	---	11.74	---	13.27	---	11.42	---	11.64
S-28	---	13.17	14.56	15.48	13.39	12.69	14.63	13.85
S-29R	---	11.76	---	14.92	---	11.26	13.87	12.75
S-30	---	9.79	10.62	11.46	9.93	9.72	10.59	10.57
S-31R2	---	11.03	---	13.67	---	10.37	---	11.17
S-32	---	10.00	11.22	12.75	10.16	9.71	---	10.08
S-33	---	9.53	11.06	12.05	9.74	9.42	---	9.86
S-34	---	8.81	9.68	10.86	8.92	8.64	---	9.16
S-35D	11.88	11.38	12.57	13.43	12.07	11.50	12.70	12.70
S-35S	9.40	8.97	9.79	11.11	9.16	8.98	9.69	9.68
S-36	---	9.81	11.03	14.56	10.01	9.60	---	10.32
S-37	---	9.04	9.68	10.57	9.20	8.97	---	9.27
S-38	---	13.05	---	15.23	---	12.54	---	13.40
S-39D	---	12.31	14.34	15.55	12.56	11.85	14.58	14.53
S-39S	---	12.37	14.36	15.56	12.58	11.87	14.60	14.49
UP-1	---	13.95	---	16.19	---	13.37	---	13.62
UP-2	---	13.50	---	15.98	---	13.33	---	13.49
Release Assessment Phase 1								
MW-20D	---	12.77	13.73	14.46	13.06	12.68	13.74	13.65
MW-20S	---	12.78	13.79	14.52	13.07	12.75	13.75	13.53
MW-21S	---	15.63	---	18.25	15.68	14.60	---	15.77
MW-22S	---	15.92	---	18.03	15.88	15.16	---	16.58
MW-23S	---	14.02	---	15.91	11.51	13.68	---	13.74
RA-10D	---	13.58	---	15.88	---	13.04	---	13.38
RA-10S	---	13.62	---	15.92	---	13.08	---	14.10
S-40D	---	10.76	11.57	12.80	11.10	10.61	11.91	11.86
S-40S	---	9.81	11.39	14.04	10.17	9.66	11.96	11.58
S-41D	10.78	10.65	11.27	12.24	10.92	10.47	11.48	11.31
S-41S	8.46	8.11	8.68	9.89	8.20	8.08	8.62	8.60
S-42D	10.59	10.27	11.02	11.59	10.47	10.19	11.03	10.87
S-42S	10.46	---	10.88	11.45	10.31	NA	NA	NA
S-43D	12.52	12.22	13.30	14.11	12.64	12.18	13.45	13.27
S-43S	12.38	12.09	13.15	13.92	12.49	12.04	13.34	12.98

Table 1

Groundwater Elevation Data - January 2017 Through June 2017

Well ID	Measurement Date							
	7/27/2016	8/31/2016	10/17/2016	11/29/2016	1/30/2017	2/27/2017	5/5/2017	5/29/2017
	Groundwater Elevation (Feet MSL)							
Release Assessment Phase 2A								
OSMW-1D	11.62	---	12.15	13.08	11.79	11.36	12.31	12.12
OSMW-1S	11.13	---	11.82	12.51	11.20	10.74	11.66	11.58
OSMW-2D	10.87	---	---	12.74	11.30	10.77	12.05	11.73
OSMW-2S	10.78	---	---	12.54	11.19	10.52	11.92	11.67
OSMW-3D	11.24	---	---	13.06	11.64	10.89	12.35	11.99
OSMW-3S	11.06	---	---	12.63	11.29	10.48	12.09	11.23
OSMW-4D	8.52	---	---	9.83	8.74	8.21	9.43	9.37
OSMW-4S	8.26	---	---	9.34	8.32	7.90	9.02	8.99
OSMW-5D	9.07	---	---	10.25	9.39	10.69	9.58	9.72
OSMW-5S	8.61	---	---	9.80	8.84	8.17	8.63	8.73
OSMW-6D	6.91	---	---	7.87	7.07	6.52	7.14	7.12
OSMW-6S	6.49	---	---	7.63	6.67	6.16	7.23	7.06
OSMW-7D[1]	---	---	---	---	---	---	12.97	12.95
OSMW-7S[1]	---	---	---	---	---	---	12.59	12.16
OSMW-8D[1]	---	---	---	---	---	---	12.38	11.97
OSMW-8S[1]	---	---	---	---	---	---	11.60	11.53
OSMW-9D[1]	---	---	---	---	---	---	10.87	10.08
OSMW-9S[1]	---	---	---	---	---	---	10.03	9.62
OSMW-10D[1]	---	---	---	---	---	---	12.77	12.28
OSMW-10S[1]	---	---	---	---	---	---	12.55	12.14
OSMW-11S[1]	---	---	---	---	---	---	9.58	8.71
OSMW-12D[1]	---	---	---	---	---	---	8.95	8.44
OSMW-12S[1]	---	---	---	---	---	---	9.05	8.56
OSPZ-1[1]	---	---	---	---	---	---	12.83	12.79

Notes:

--- Well is not included in the monthly groundwater elevation monitoring.

NA - Not Accessible. Well was not accessible during groundwater elevation monitoring.

[1] These wells/piezometer were installed as part of the Phase 2C Field Program completed during the 2nd Quarter 2017.

Table 2
Former Tank Farm Area Groundwater Analytical Results - March 2017

Parameter	USEPA Residential Groundwater Concentration for Vapor Intrusion	USEPA Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or June 2017 Tap Water RSL	April 2016 PRWQS[1]	MW-3 3/14/2017	MW-5 3/14/2017	MW-7 3/14/2017	MW-9 3/20/2017	MW-13 3/13/2017	MW-14 3/13/2017	MW-14 DUP 3/13/2017	MW-15 3/13/2017	MW-16 3/13/2017	MW-17 3/14/2017	MW-18 3/14/2017	MW-19 3/20/2017
FTF Area COC Results (ug/L)																
Acetone	18000000	77000000	14000	---	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<250
Chloromethane	230	960	190	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20
Methyl Isobutyl Ketone (MIBK)	420000	1800000	6300	---	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50
Methylene Chloride	630	7600	5	46	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50
Xylene (total)	290	1200	10000	10000	**1.57 J**	**5.77**	**3.04**	<2	<2	<2	<2	<2	<2	**91.49**	**0.83 J**	**1226.4**
Other Volatile Organic Compounds Analytical Results (ug/L)																
1,1,1-Trichloroethane	6000	25000	200	200	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
1,1,2,2-Tetrachloroethane	2.4	11	0.076	1.7	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
1,1,2-Trichloroethane	4	18	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
1,1-Dichloroethane	6.2	27	2.8	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
1,1-Dichloroethylene	160	690	7	7	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
1,2,3-Trichlorobenzene	---	---	7	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20
1,2,4-Trichlorobenzene	25	110	70	35	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20
1,2,4-Trimethylbenzene	21	89	56	---	**0.57 J**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
1,2-Dibromo-3-chloropropane	0.02	0.24	0.2	---	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50
1,2-Dibromoethane	0.13	0.58	0.05	0.052	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20
1,2-Dichlorobenzene	1900	8100	600	420	**0.32 J**	**0.43 J**	**8.4**	<1	<1	<1	<1	<1	**6.9**	<1	**1.2**	<10
1,2-Dichloroethane	1.8	7.8	5	3.8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
1,2-Dichloropropane	1.9	8.4	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
1,3-Butadiene	0.027	0.12	0.018	---	<2 J	<2 J	<2 J	<2	<2 J	<2 J	<2 J	<2 J	<2 J	<2 J	<2 J	<20
1,3-Dichlorobenzene	---	---	---	320	<1	<1	**0.35 J**	<1	<1	<1	<1	<1	**0.25 J**	<1	<1	<10
1,4-Dichlorobenzene	1.9	8.3	75	63	<1	<1	**1.3**	<1	<1	<1	<1	<1	**1.5**	<1	**0.4 J**	<10
1,4-Dioxane	2200	9600	0.46	---	**0.26 J**	**0.55**	**1.3**	<0.29	<0.29	**1.7**	**1.5**	**5.7**	**0.38**	**1.6**	**1.7**	**0.86**
2-Butanone (MEK)	1800000	7500000	5600	---	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50
2-Hexanone	6200	26000	38	---	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100
Benzene	1.3	5.6	5	5	**0.35 J**	**0.6 J**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
Benzyl Chloride	2.5	11	0.089	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20
Bromochloromethane	560	2400	83	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
Bromodichloromethane	0.69	3	0.13	5.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
Bromoform	85	370	3.3	43	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
Carbon Disulfide	1000	4300	810	---	**1.3 J**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20
Carbon Tetrachloride	0.34	1.5	5	2.3	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	<10 J
Chlorobenzene	310	1300	100	100	**0.49 J**	**0.26 J**	**1.4**	<1	<1	<1	<1	<1	<1	<1	**0.77 J**	<10
Chloroethane	20000	82000	21000	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20
Chloroform	0.66	2.9	8	57	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
cis-1,2-Dichloroethylene	---	---	70	70	<1	<1	**1.2**	<1	<1	<1	<1	<1	<1	<1	<1	<10
cis-1,3-Dichloropropene[2]	---	---	0.47	3.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
Cyclohexane	820	3500	13000	---	**3.9**	<1	<1	<1	<1	<1	<1	**0.65 J**	<1	<1	**2.7**	<10
Dibromochloromethane	---	---	0.87	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
Dichlorodifluoromethane	6	25	200	---	<2	<2	**8.5**	<2	**2.6**	<2	**0.69 J**	<2	**0.56 J**	<2	<2	<20
Ethylbenzene	2.6	12	700	530	**0.43 J**	<1	**1.1**	<1	<1	<1	<1	<1	<1	**6**	<1	**646**
Freon 113	1200	5100	55000	---	<1	<1	<1	<1	<1	<1	<1	<1	**9.4**	<1	<1	<10
Hexachlorobutadiene	0.21	0.93	0.14	4.4	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Isopropylbenzene	630	2600	450	---	**17.9**	**11.4**	<1	<1	<1	<1	<1	**28**	<1	**10.6**	**12.5**	**6.6 J**
Methyl Acetate	---	---	20000	---	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<200
Methyl Bromide	15	63	7.5	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20
Methyl Tert Butyl Ether	370	1600	14	14	<1	**7.3**	**0.41 J**	<1	<1	<1	<1	**21**	<1	<1	**0.55 J**	<10
Methylcyclohexane	---	---	---	---	**3.8**	<1	<1	<1	<1	<1	<1	**0.49 J**	<1	<1	**5.5**	<10
p-Isopropyl Toluene	---	---	---	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
Styrene	7000	29000	100	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
tert-Amyl Alcohol	4100	17000	6.3	---	<20	**10.3 J**	<20	<20	<20	<20	<20	<20	<20	<20	<20	<200
tert-Butyl Alcohol	---	---	---	1400	<20	**364**	<20	<20	<20 J	<20 J	<20 J	**435 J**	<20 J	<20	<20	<200
Tetrachloroethylene	12	50	5	5	<1	<1	<1	<1 J	<1	<1	<1	<1	<1	<1	<1	<10 J
Tetrahydrofuran	590000	2500000	3400	---	<5	<5	<5	<5	<5	<5	<5	**5.1**	<5	<5	<5	<50
Toluene	15000	63000	1000	1000	**0.54 J**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1 J	<10
trans-1,2-Dichloroethylene	---	---	100	100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
trans-1,3-Dichloropropene[2]	---	---	0.47	3.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
Trichloroethylene	0.94	5.9	5	5	<1	<1	**0.75 J**	<1	<1	<1	<1	<1	<1	<1	<1	<10
Trichlorofluoromethane	---	---	5200	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20
Vinyl Chloride	0.13	2.1	2	0.25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
Low Molecular Weight Alcohols Analytical Results (ug/L)																
Ethanol	---	---	---	10000	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Isobutyl Alcohol	---	---	5900	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100

Table 2
Former Tank Farm Area Groundwater Analytical Results - March 2017

Parameter	USEPA Residential Groundwater Concentration for Vapor Intrusion	USEPA Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or June 2017 Tap Water RSL	April 2016 PRWQS[1]	MW-3 3/14/2017	MW-5 3/14/2017	MW-7 3/14/2017	MW-9 3/20/2017	MW-13 3/13/2017	MW-14 3/13/2017	MW-14 DUP 3/13/2017	MW-15 3/13/2017	MW-16 3/13/2017	MW-17 3/14/2017	MW-18 3/14/2017	MW-19 3/20/2017
Isopropyl Alcohol	450000	1900000	410	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Methanol	86000000	360000000	20000	---	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
n-Butyl Alcohol	---	---	2000	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
n-Propyl Alcohol	---	---	---	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
sec-Butyl Alcohol	58000000	---	24000	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Polycyclic Aromatic Hydrocarbons Analytical Results (ug/L)																
1-Methylnaphthalene	---	---	1.1	---	**61.3**	<0.98	<0.98	<0.98	<5	<4.9	<4.9	<4.9	<4.8	<0.96	**10.4**	**1.1**
2-Methylnaphthalene	---	---	36	---	**56.8**	<0.98	<0.98	<0.98	<5	<4.9	<4.9	<4.9	<4.8	<0.96	**0.62 J**	**0.84 J**
Acenaphthene	---	---	530	670	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Acenaphthylene	---	---	---	---	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Anthracene	---	---	1800	8300	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Benzo(a)anthracene	---	---	0.03	0.038	<0.2	**0.049 J**	<0.2	<0.2	<5	<4.9	<4.9	<4.9	<4.8	<0.19	<0.2	**0.4**
Benzo(a)pyrene	---	---	0.2	0.038	<0.2	**0.046 J**	<0.2	<0.2	<5	<4.9	<4.9	<4.9	<4.8	<0.19	<0.2	<0.2
Benzo(b)fluoranthene	---	---	0.25	0.038	<0.2	**0.044 J**	<0.2	<0.2	<5	<4.9	<4.9	<4.9	<4.8	<0.19	<0.2	<0.2
Benzo(g,h,i)perylene	---	---	---	210	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Benzo(k)fluoranthene	---	---	2.5	0.038	<0.2	**0.046 J**	<0.2	<0.2	<5	<4.9	<4.9	<4.9	<4.8	<0.19	<0.2	<0.2
Chrysene	---	---	25	0.038	<0.2	**0.041 J**	<0.2	<0.2	<5	<4.9	<4.9	<4.9	<4.8	<0.19	<0.2	<0.2
Dibenz(a,h)anthracene	---	---	0.025	0.038	<0.2	**0.04 J**	<0.2	<0.2	<5	<4.9	<4.9	<4.9	<4.8	<0.19	<0.2	<0.2
Fluoranthene	---	---	800	130	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	**3.3 J**
Fluorene	---	---	290	1100	**1.5 J**	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	**1.6 J**	<5
Indeno(1,2,3-cd)pyrene	---	---	0.25	0.038	<0.2	**0.059 J**	<0.2	<0.2	<5	<4.9	<4.9	<4.9	<4.8	<0.19	<0.2	<0.2
Naphthalene	3.2	14	0.17	0.17	**3.1**	<0.98	<0.98	<0.98	<5	<4.9	<4.9	<4.9	<4.8	<0.96	**0.55 J**	**1.2**
Phenanthrene	---	---	---	18	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Pyrene	---	---	120	830	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	**2.6 J**
Volatile Petroleum Hydrocarbons Analytical Results (ug/L)																
C5-C8 Aliphatics (Unadj.)	---	---	1300	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100 J	<100	<100
C9-C10 Aromatics (Unadj.)	---	---	5.5	---	**304**	<100	<100	<100	<100	<100	<100	**45.9 J**	<100	**71.2 J**	**177**	<100
C9-C12 Aliphatics (Unadj.)	---	---	100	---	**98.1 J**	<100	<100	<100	<100	<100	<100	<100	<100	**138 J**	**70.8 J**	**2550**
Extractable Petroleum Hydrocarbons Analytical Results (ug/L)																
C11-C22 Aromatics (Unadj.)	---	---	5.5	---	**421**	**81.2 J**	<200	<200	<200	<190	<200	**118 J**	<200	**127 J**	<200	<200 J
C19-C36 Aliphatics	---	---	60000	---	<200	<190	<200	<200	<10000	<10000	<10000	<10000	<10000	<190	<200	<200
C9-C18 Aliphatics	---	---	100	---	<200	<190	<200	<200	<10000	<10000	<10000	<10000	<10000	<190	**53.4 J**	<200
Semivolatile Organic Compounds Analytical Results (ug/L)																
1,1'-Biphenyl	23	95	0.83	---	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
1,2,4,5-Tetrachlorobenzene	---	---	1.7	---	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
2,3,4,6-Tetrachlorophenol	---	---	240	---	<4.9	<4.9	<4.9	<4.9	<5 J	<4.9 J	<4.9 J	<4.9 J	<4.8 J	<4.8	<4.9	<5
2,4,5-Trichlorophenol	---	---	1200	---	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
2,4,6-Trichlorophenol	---	---	4.1	14	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
2,4-Dichlorophenol	---	---	46	77	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
2,4-Dimethylphenol	---	---	360	380	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	**7.6**
2,4-Dinitrophenol	---	---	39	69	<25	<25	<25	<25	<25 J	<25 J	<25 J	<25 J	<24 J	<24	<25	<25
2,4-Dinitrotoluene	---	---	0.24	1.1	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
2,6-Dinitrotoluene	---	---	0.049	---	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
2-Chloronaphthalene	---	---	750	1000	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
2-Chlorophenol	---	---	91	81	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
2-Methylphenol	---	---	930	---	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
2-Nitroaniline	---	---	190	---	<4.9	<4.9	<4.9	<4.9	<5 J	<4.9 J	<4.9 J	<4.9 J	<4.8 J	<4.8	<4.9	<5
2-Nitrophenol	---	---	---	---	<4.9	<4.9	<4.9	<4.9	<5 J	<4.9 J	<4.9 J	<4.9 J	<4.8 J	<4.8	<4.9	<5
3&4-Methylphenol[3]	---	---	930	---	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
3,3'-Dichlorobenzidine	---	---	0.13	0.21	<4.9 J	<4.9 J	<4.9 J	<4.9 J	<5	<4.9	<4.9	<4.9	<4.8	<4.8 J	<4.9 J	<5 J
3-Nitroaniline	---	---	---	---	<4.9 J	<4.9 J	<4.9 J	<4.9 J	<5	<4.9	<4.9	<4.9	<4.8	<4.8 J	<4.9 J	<5 J
4,6-Dinitro-2-Methylphenol	---	---	1.5	13	<9.8	<9.8	<9.8	<9.8	<10 J	<9.8 J	<9.8 J	<9.8 J	<9.6 J	<9.6	<9.8	<9.9
4-Bromophenyl Phenyl Ether	---	---	---	---	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
4-Chloro-3-Methylphenol	---	---	1400	---	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
4-Chloroaniline	---	---	0.37	---	<4.9 J	<4.9 J	<4.9 J	<4.9 J	**0.93 J**	**0.86 J**	**0.85 J**	**2.4 J**	<4.8	<4.8 J	<4.9 J	<5 J
4-Chlorophenyl Phenyl Ether	---	---	---	---	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
4-Nitroaniline	---	---	3.8	---	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
4-Nitrophenol	---	---	---	---	<25	<25	<25	<25	<25	<25	<25	<25	<24	<24	<25	<25
Acetophenone	---	---	1900	---	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	**3.1 J**
Atrazine	---	---	3	---	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Benzaldehyde	---	---	19	---	<25	<25	<25	<25	<25	<25	<25	<25	<24	<24	<25	<25
Bis(2-chloroethoxy)methane	---	---	59	---	<4.9	<4.9	<4.9	<4.9	<5 J	<4.9 J	<4.9 J	<4.9 J	<4.8 J	<4.8	<4.9	<5
Bis(2-chloroethyl)ether	8.4	37	0.014	0.3	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
bis(2-Chloroisopropyl)ether	---	---	710	1400	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5

Table 2
Former Tank Farm Area Groundwater Analytical Results - March 2017

Parameter	USEPA Residential Groundwater Concentration for Vapor Intrusion	USEPA Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or June 2017 Tap Water RSL	April 2016 PRWQS[1]	MW-3 3/14/2017	MW-5 3/14/2017	MW-7 3/14/2017	MW-9 3/20/2017	MW-13 3/13/2017	MW-14 3/13/2017	MW-14 DUP 3/13/2017	MW-15 3/13/2017	MW-16 3/13/2017	MW-17 3/14/2017	MW-18 3/14/2017	MW-19 3/20/2017
Bis(2-ethylhexyl)phthalate	---	---	6	12	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Butyl Benzyl Phthalate	---	---	16	1500	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Caprolactam	---	---	9900	---	<9.8	<9.8	<9.8	<9.8	<10	<9.8	<9.8	<9.8	<9.6	<9.6	<9.8	<9.9
Carbazole	---	---	---	---	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Dibenzofuran	---	---	7.9	---	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Diethyl Phthalate	---	---	15000	17000	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Dimethyl Phthalate	---	---	---	270000	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Di-n-butyl Phthalate	---	---	900	2000	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Di-n-octyl Phthalate	---	---	200	---	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Hexachlorobenzene	0.058	0.25	1	0.0028	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Hexachlorocyclopentadiene	0.042	0.18	50	40	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Hexachloroethane	1.1	4.8	0.33	14	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Isophorone	---	---	78	350	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Nitrobenzene	50	220	0.14	17	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
N-Nitrosodi-n-propylamine	---	---	0.011	0.05	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
N-Nitrosodiphenylamine	---	---	12	---	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5
Pentachlorophenol	---	---	1	1	<25	<25	<25	<25	<25	<25	<25	<25	<24	<24	<25	<25
Phenol	---	---	5800	10000	<4.9	<4.9	<4.9	<4.9	<5	<4.9	<4.9	<4.9	<4.8	<4.8	<4.9	<5

Notes:

[1] April 2016 Puerto Rico Water Quality Standards Regulation for Class SG groundwater

[2] USEPA screening level and PRWQS are for 1,3-Dichloropropene. The USEPA and PREQB have not specifically established screening levels for cis-1,3-Dichloropropene or trans-1,3-Dichloropropene.

[3] The Tapwater screening level applied to 3&4-Methylphenol is the screening level for 3-Methylphenol. This is a conservative level; it is lower than the screening level for 4-Methylphenol.

--- USEPA and/or PREQB have not developed a screening level for this compound.

Detected values are shown in bold.

Values which exceed a Drinking Water Quality Standard (USEPA MCL, USEPA Tapwater RSL, PRWQS) and/or a USEPA Groundwater Concentration for Vapor Intrusion are shown highlighted yellow.

Sample results with elevated reporting limits, due to sample dilution from the presence of other target compounds, that are above USEPA and PREQB groundwater action levels are shaded gray.

J - Indicates an estimated value.

Table 3
Former Brule Incinerator Area Groundwater Analytical Results - March 2017

Parameter	USEPA Residential Groundwater Concentration for Vapor Intrusion	USEPA Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or June 2017 Tap Water RSL	April 2016 PRWQS[1]	BR-1 3/10/2017	BR-1 DUP 3/10/2017	BR-2 3/10/2017	BR-3 3/13/2017	BR-4 3/10/2017
Volatile Organic Compounds Analytical Results (ug/L)									
1,1,1-Trichloroethane	6000	25000	200	200	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	2.4	11	0.076	1.7	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	4	18	5	5	<1	<1	<1	<1	<1
1,1-Dichloroethane	6.2	27	2.8	---	<1	<1	<1	<1	<1
1,1-Dichloroethylene	160	690	7	7	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	---	---	7	---	<2	<2	<2	<2	<2
1,2,4-Trichlorobenzene	25	110	70	35	<2	<2	<2	<2	<2
1,2,4-Trimethylbenzene	21	89	56	---	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	0.02	0.24	0.2	---	<5	<5	<5	<5	<5
1,2-Dibromoethane	0.13	0.58	0.05	0.052	<2	<2	<2	<2	<2
1,2-Dichlorobenzene	1900	8100	600	420	**0.98 J**	**1**	**0.5 J**	<1	<1
1,2-Dichloroethane	1.8	7.8	5	3.8	<1	<1	<1	<1	<1
1,2-Dichloropropane	1.9	8.4	5	5	<1	<1	<1	<1	<1
1,3-Butadiene	0.027	0.12	0.018	---	<2 J	<2 J	<2 J	<2 J	<2 J
1,3-Dichlorobenzene	---	---	---	320	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	1.9	8.3	75	63	**0.58 J**	**0.58 J**	<1	<1	<1
1,4-Dioxane	2200	9600	0.46	---	**161**	**155**	**7.6**	**37.6**	**0.54**
2-Butanone (MEK)	1800000	7500000	5600	---	<5	<5	<5	<5	<5
2-Hexanone	6200	26000	38	---	<10	<10	<10	<10	<10
Acetone	18000000	77000000	14000	---	<25	<25	<25	<25	<25
Benzene	1.3	5.6	5	5	<1	<1	<1	<1	<1
Benzyl Chloride	2.5	11	0.089	---	<2	<2	<2	<2	<2
Bromochloromethane	560	2400	83	---	<1	<1	<1	<1	<1
Bromodichloromethane	0.69	3	0.13	5.5	<1	<1	<1	<1	<1
Bromoform	85	370	3.3	43	<1	<1	<1	<1	<1
Carbon Disulfide	1000	4300	810	---	<2	<2	<2	<2	<2
Carbon Tetrachloride	0.34	1.5	5	2.3	<1	<1	<1	<1	<1
Chlorobenzene	310	1300	100	100	**1.2**	**1.2**	**0.26 J**	**0.34 J**	<1
Chloroethane	20000	82000	21000	---	<2	<2	<2	<2	<2
Chloroform	0.66	2.9	8	57	<1	<1	<1	<1	<1
Chloromethane	230	960	190	---	<2	<2	<2	<2	<2
cis-1,2-Dichloroethylene	---	---	70	70	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene[2]	---	---	0.47	3.4	<1	<1	<1	<1	<1
Cyclohexane	820	3500	13000	---	**3.3**	**4**	<1	<1	<1
Dibromochloromethane	---	---	0.87	4	<1	<1	<1	<1	<1
Dichlorodifluoromethane	6	25	200	---	<2	<2 J	<2	<2	<2
Ethylbenzene	2.6	12	700	530	<1	<1	<1	<1	<1
Freon 113	1200	5100	55000	---	<1	<1	<1	<1	<1
Hexachlorobutadiene	0.21	0.93	0.14	4.4	<5	<4.8	<5	<4.9	<4.9
Isopropylbenzene	630	2600	450	---	**2.4**	**2.9**	**4.6**	**1**	<1

Table 3
Former Brule Incinerator Area Groundwater Analytical Results - March 2017

Parameter	USEPA Residential Groundwater Concentration for Vapor Intrusion	USEPA Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or June 2017 Tap Water RSL	April 2016 PRWQS[1]	BR-1 3/10/2017	BR-1 DUP 3/10/2017	BR-2 3/10/2017	BR-3 3/13/2017	BR-4 3/10/2017
Methyl Acetate	---	---	20000	---	<20	<20	<20	<20	<20
Methyl Bromide	15	63	7.5	---	<2	<2	<2	<2	<2
Methyl Isobutyl Ketone (MIBK)	420000	1800000	6300	---	<5	<5	<5	<5	<5
Methyl Tert Butyl Ether	370	1600	14	14	**10.3**	**11**	**2.6**	**1**	<1
Methylcyclohexane	---	---	---	---	<1	<1	<1	<1	<1
Methylene Chloride	630	7600	5	46	<5	<5	<5	<5	<5
p-Isopropyl Toluene	---	---	---	---	<1	<1	<1	<1	<1
Styrene	7000	29000	100	---	<1	<1	<1	<1	<1
tert-Amyl Alcohol	4100	17000	6.3	---	<20	<20	<20	<20	<20
tert-Butyl Alcohol	---	---	---	1400	**140**	**109 J**	**11.7 J**	<20 J	<20
	12	50	5	5	<1	<1	<1	<1	<1
Tetrahydrofuran	590000	2500000	3400	---	<5	<5	<5	<5	<5
Toluene	15000	63000	1000	1000	<1	<1	<1	<1	<1
trans-1,2-Dichloroethylene	---	---	100	100	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene[2]	---	---	0.47	3.4	<1	<1	<1	<1	<1
Trichloroethylene	0.94	5.9	5	5	<1	<1	<1	<1	<1
Trichlorofluoromethane	---	---	5200	---	<2	<2	<2	<2	<2
Vinyl Chloride	0.13	2.1	2	0.25	<1	<1	<1	<1	<1
Xylene (total)	290	1200	10000	10000	<2	<2	<2	<2	<2
Low Molecular Weight Alcohols Analytical Results (ug/L)									
Ethanol	---	---	---	10000	<100	<100	<100	<100	<100
Isobutyl Alcohol	---	---	5900	---	<100	<100	<100	<100	<100
Isopropyl Alcohol	450000	1900000	410	---	<100	<100	<100	<100	<100
Methanol	86000000	360000000	20000	---	<200	<200	<200	<200	<200
n-Butyl Alcohol	---	---	2000	---	<100	<100	<100	<100	<100
n-Propyl Alcohol	---	---	---	---	<100	<100	<100	<100	<100
sec-Butyl Alcohol	58000000	---	24000	---	<100	<100	<100	<100	<100
Polycyclic Aromatic Hydrocarbons Analytical Results (ug/L)									
1-Methylnaphthalene	---	---	1.1	---	<1	<0.95	<5	<4.9	<0.97
2-Methylnaphthalene	---	---	36	---	<1	<0.95	<5	<4.9 J	<0.97
Acenaphthene	---	---	530	670	<5	<4.8	<5	<4.9	<4.9
Acenaphthylene	---	---	---	---	<5	<4.8	<5	<4.9	<4.9
Anthracene	---	---	1800	8300	<5	<4.8	<5	<4.9	<4.9
Benzo(a)anthracene	---	---	0.03	0.038	<5	<4.8	<5	<4.9	<4.9
Benzo(a)pyrene	---	---	0.2	0.038	<5	<4.8	<5	<4.9	<4.9
Benzo(b)fluoranthene	---	---	0.25	0.038	<5	<4.8	<5	<4.9	<4.9
Benzo(g,h,i)perylene	---	---	---	210	<5	<4.8	<5	<4.9	<4.9
Benzo(k)fluoranthene	---	---	2.5	0.038	<5	<4.8	<5	<4.9	<4.9
Chrysene	---	---	25	0.038	<5	<4.8	<5	<4.9	<4.9
Dibenz(a,h)anthracene	---	---	0.025	0.038	<5	<4.8	<5	<4.9	<4.9
Fluoranthene	---	---	800	130	<5	<4.8	**0.73 J**	<4.9	<4.9

Table 3
Former Brule Incinerator Area Groundwater Analytical Results - March 2017

Parameter	USEPA Residential Groundwater Concentration for Vapor Intrusion	USEPA Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or June 2017 Tap Water RSL	April 2016 PRWQS[1]	BR-1 3/10/2017	BR-1 DUP 3/10/2017	BR-2 3/10/2017	BR-3 3/13/2017	BR-4 3/10/2017
Fluorene	---	---	290	1100	<5	<4.8	<5	<4.9	<4.9
Indeno(1,2,3-cd)pyrene	---	---	0.25	0.038	<5	<4.8	<5	<4.9	<4.9
Naphthalene	3.2	14	0.17	0.17	<1	<0.95	<5	<4.9	<0.97
Phenanthrene	---	---	---	18	<5	<4.8	<5	<4.9	<4.9
Pyrene	---	---	120	830	<5	<4.8	<5	<4.9	<4.9
Volatile Petroleum Hydrocarbons Analytical Results (ug/L)									
C5-C8 Aliphatics (Unadj.)	---	---	1300	---	<100	<100	<100 J	<100	<100
C9-C10 Aromatics (Unadj.)	---	---	5.5	---	<100	<100	**43.3 J**	<100	<100
C9-C12 Aliphatics (Unadj.)	---	---	100	---	<100	<100	<100 J	<100	<100
Extractable Petroleum Hydrocarbons Analytical Results (ug/L)									
C11-C22 Aromatics (Unadj.)	---	---	5.5	---	**174 J**	**167 J**	**110 J**	<200	**114 J**
C19-C36 Aliphatics	---	---	60000	---	<190	<200	<10000	<10000	<200
C9-C18 Aliphatics	---	---	100	---	<190	<200	<10000	<10000	<200
Semivolatile Organic Compounds Analytical Results (ug/L)									
1,1'-Biphenyl	23	95	0.83	---	<5	<4.8	<5	<4.9	<4.9
1,2,4,5-Tetrachlorobenzene	---	---	1.7	---	<5	<4.8	<5	<4.9	<4.9
2,3,4,6-Tetrachlorophenol	---	---	240	---	<5	<4.8	<5	<4.9 J	<4.9
2,4,5-Trichlorophenol	---	---	1200	---	<5	<4.8	<5	<4.9	<4.9
2,4,6-Trichlorophenol	---	---	4.1	14	<5	<4.8	<5	<4.9	<4.9
2,4-Dichlorophenol	---	---	46	77	<5	<4.8	<5	<4.9	<4.9
2,4-Dimethylphenol	---	---	360	380	<5	<4.8	<5	<4.9	<4.9
2,4-Dinitrophenol	---	---	39	69	<25	<24	<25	<25 J	<24
2,4-Dinitrotoluene	---	---	0.24	1.1	<5	<4.8	<5	<4.9	<4.9
2,6-Dinitrotoluene	---	---	0.049	---	<5	<4.8	<5	<4.9	<4.9
2-Chloronaphthalene	---	---	750	1000	<5	<4.8	<5	<4.9	<4.9
2-Chlorophenol	---	---	91	81	<5	<4.8	<5	<4.9	<4.9
2-Methylphenol	---	---	930	---	<5	<4.8	<5	<4.9	<4.9
2-Nitroaniline	---	---	190	---	<5	<4.8	<5	<4.9 J	<4.9
2-Nitrophenol	---	---	---	---	<5	<4.8	<5	<4.9 J	<4.9
3&4-Methylphenol[3]	---	---	930	---	<5	<4.8	<5	<4.9	<4.9
3,3'-Dichlorobenzidine	---	---	0.13	0.21	<5	<4.8	<5	<4.9	<4.9
3-Nitroaniline	---	---	---	---	<5 J	<4.8 J	<5	<4.9	<4.9 J
4,6-Dinitro-2-Methylphenol	---	---	1.5	13	<10	<9.5	<10	<9.8 J	<9.7
4-Bromophenyl Phenyl Ether	---	---	---	---	<5	<4.8	<5	<4.9	<4.9
4-Chloro-3-Methylphenol	---	---	1400	---	<5	<4.8	<5	<4.9	<4.9
4-Chloroaniline	---	---	0.37	---	**3 J**	**2.7 J**	<5	**1.1 J**	<4.9
4-Chlorophenyl Phenyl Ether	---	---	---	---	<5	<4.8	<5	<4.9	<4.9
4-Nitroaniline	---	---	3.8	---	<5	<4.8	<5	<4.9	<4.9
4-Nitrophenol	---	---	---	---	<25	<24	<25	<25	<24
Acetophenone	---	---	1900	---	<5	<4.8	<5	<4.9	<4.9
Atrazine	---	---	3	---	<5	<4.8	<5	<4.9	<4.9

Table 3
Former Brule Incinerator Area Groundwater Analytical Results - March 2017

Parameter	USEPA Residential Groundwater Concentration for Vapor Intrusion	USEPA Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or June 2017 Tap Water RSL	April 2016 PRWQS[1]	BR-1 3/10/2017	BR-1 DUP 3/10/2017	BR-2 3/10/2017	BR-3 3/13/2017	BR-4 3/10/2017
Benzaldehyde	---	---	19	---	<25	<24	<25	<25	<24
Bis(2-chloroethoxy)methane	---	---	59	---	<5 J	<4.8 J	<5	<4.9 J	<4.9 J
Bis(2-chloroethyl)ether	8.4	37	0.014	0.3	<5	<4.8	<5	<4.9	<4.9
bis(2-Chloroisopropyl)ether	---	---	710	1400	<5	<4.8	<5	<4.9	<4.9
Bis(2-ethylhexyl)phthalate	---	---	6	12	<5	<4.8	<5	<4.9	<4.9
Butyl Benzyl Phthalate	---	---	16	1500	<5	<4.8	<5	<4.9	<4.9
Caprolactam	---	---	9900	---	<10	<9.5	<10	<9.8	<9.7
Carbazole	---	---	---	---	<5	<4.8	<5	<4.9	<4.9
Dibenzofuran	---	---	7.9	---	<5	<4.8	<5	<4.9	<4.9
Diethyl Phthalate	---	---	15000	17000	<5	<4.8	<5	<4.9	<4.9
Dimethyl Phthalate	---	---	---	270000	<5	<4.8	<5	<4.9	<4.9
Di-n-butyl Phthalate	---	---	900	2000	<5	<4.8	<5	<4.9	<4.9
Di-n-octyl Phthalate	---	---	200	---	<5	<4.8	<5	<4.9	<4.9
Hexachlorobenzene	0.058	0.25	1	0.0028	<5	<4.8	<5	<4.9	<4.9
Hexachlorocyclopentadiene	0.042	0.18	50	40	<5	<4.8	<5	<4.9	<4.9
Hexachloroethane	1.1	4.8	0.33	14	<5	<4.8	<5	<4.9	<4.9
Isophorone	---	---	78	350	<5	<4.8	<5	<4.9	<4.9
Nitrobenzene	50	220	0.14	17	<5	<4.8	<5	<4.9	<4.9
N-Nitrosodi-n-propylamine	---	---	0.011	0.05	<5	<4.8	<5	<4.9	<4.9
N-Nitrosodiphenylamine	---	---	12	---	<5	<4.8	<5	<4.9	<4.9
Pentachlorophenol	---	---	1	1	<25	<24	<25	<25	<24
Phenol	---	---	5800	10000	<5 J	<4.8 J	<5	<4.9	<4.9 J

Notes:

[1] April 2016 Puerto Rico Water Quality Standards Regulation for Class SG groundwater.

[2] USEPA screening level and PRWQS are for 1,3-Dichloropropene. The USEPA and PREQB have not specifically established screening levels for cis-1,3-Dichloropropene or trans-1,3-Dichloropropene.

[3] The Tapwater screening level applied to 3&4-Methylphenol is the screening level for 3-Methylphenol. This is a conservative level; it is lower than the screening level for 4-Methylphenol.

--- USEPA and/or PREQB have not developed a screening level for this compound.

Detected values are shown in bold.

Values which exceed a Drinking Water Quality Standard (USEPA MCL, USEPA Tapwater RSL, PRWQS) and/or a USEPA Groundwater Concentration for Vapor Intrusion are shown highlighted yellow.

Sample results with elevated reporting limits, due to sample dilution from the presence of other target compounds, that are above USEPA and PREQB groundwater action levels are shaded gray.

J - Indicates an estimated value.

Table 4
Building 5 Area Groundwater Analytical Results - March 2017

Parameter	USEPA Residential Groundwater Concentration for Vapor Intrusion	USEPA Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or June 2017 Tap Water RSL	April 2016 PRWQS[1]	A-1R4 3/22/2017	A-2R2 3/22/2017	D-1R 3/21/2017	E-1R 3/21/2017	G-1R3 3/21/2017	MW-11 3/20/2017	S-28 3/17/2017	S-29R 3/22/2017	S-30 3/20/2017	S-31R2 3/22/2017	S-32 3/16/2017	S-33 3/16/2017	S-34 3/16/2017	S-35D 3/9/2017	S-35S 3/9/2017	S-36 3/16/2017	S-37 3/17/2017	S-38 3/21/2017	S-39D 3/15/2017	S-39S 3/15/2017	UP-1 3/17/2017	UP-1 DUP 3/17/2017	UP-2 3/17/2017
Building 5 Area COC Analytical Results (ug/L)																											
Acetone	18000000	77000000	14000	---	<25	<25	<25	<25	<13000	<25	<25	<25	<25	<500	<5000	<25	<25	<25	<25	<25	<25	<25	<25	<63	<25	<25	<25
Benzene	1.3	5.6	5	5	**4.5**	<1	**0.9 J**	<1	<500	<1	<1	<1	**0.48 J**	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
Ethylbenzene	2.6	12	700	530	**64.9**	**0.81 J**	<1	<1	**23900**	<1	<1	<1	<1	**1300**	**34200**	<1	<1	<1	<1	<1	<1	<1	<1	**389 J**	<1	<1	<1
Isopropyl Alcohol	450000	1900000	410	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100 J	<100 J	<100	<100	<100	<100	<100	<100	<100	<100
Methanol	86000000	360000000	20000	---	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200 J	<200 J	<200	<200	<200	<200	<200	<200	<200	<200
Methyl Isobutyl Ketone (MIBK)	420000	1800000	6300	---	<5	<5	<5	<5	<2500	<5	<5	<5	<5	<100	<1000	<5	<5	<5	<5	<5	<5	<5	<5	<13	<5	<5	<5
Toluene	15000	63000	1000	1000	<1 J	<1	<1	<1	<500 J	<1	<1	<1	<1	<20	**62.7 J**	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
Xylene (total)	290	1200	10000	10000	**548**	**1.8 J**	**0.94 J**	<2	**135780**	<2	<2	<2	<2	**532**	**59950**	<2	<2	<2	<2	<2	<2	**1.2 J**	<2	**1140.4**	<2	<2	<2
Other Volatile Organic Compounds Analytical Results (ug/L)																											
1,1,1-Trichloroethane	6000	25000	200	200	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
1,1,2,2-Tetrachloroethane	2.4	11	0.076	1.7	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
1,1,2-Trichloroethane	4	18	5	5	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
1,1-Dichloroethane	6.2	27	2.8	---	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
1,1-Dichloroethylene	160	690	7	7	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
1,2,3-Trichlorobenzene	---	---	7	---	<2	<2	<2	<2	<1000	<2	<2	<2	<2	<40	<400	<2	<2	<2	<2	<2	<2	<2	<2	<5	<2	<2	<2
1,2,4-Trichlorobenzene	25	110	70	35	<2	<2	<2	<2	<1000	<2	<2	<2	<2	<40	<400	<2	<2	<2	<2	<2	<2	<2	<2	<5	<2	<2	<2
1,2,4-Trimethylbenzene	21	89	56	---	**0.45 J**	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
1,2-Dibromo-3-chloropropane	0.02	0.24	0.2	---	<5	<5	<5	<5	<2500	<5	<5	<5	<5	<100	<1000	<5	<5	<5	<5	<5	<5	<5	<5	<13	<5	<5	<5
1,2-Dibromoethane	0.13	0.58	0.05	0.052	<2	<2	<2	<2	<1000	<2	<2	<2	<2	<40	<400	<2	<2	<2	<2	<2	<2	<2	<2	<5	<2	<2	<2
1,2-Dichlorobenzene	1900	8100	600	420	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
1,2-Dichloroethane	1.8	7.8	5	3.8	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
1,2-Dichloropropane	1.9	8.4	5	5	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
1,3-Butadiene	0.027	0.12	0.018	---	<2	<2	<2	<2	<1000	<2 R	<2	<2	<2	<40	<400	<2	<2 J	<2 J	<2 J	<2	<2	<2	<2 J	<5 R	<2	<2	<2
1,3-Dichlorobenzene	---	---	---	320	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
1,4-Dichlorobenzene	1.9	8.3	75	63	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
1,4-Dioxane	2200	9600	0.46	---	**47.7**	<0.29	**19.1 J**	**1140**	**0.54 J**	**188**	<0.29	<0.29	**1300**	<0.3	**3**	**18.4**	**15.9**	**22.7**	**333**	**2.6**	<0.29	**172**	**41.3**	**34.8**	**1.2**	**1.5**	**313**
2-Butanone (MEK)	1800000	7500000	5600	---	<5	<5	<5	<5	<2500	<5	<5	<5	<5	<100	<1000	<5	<5	<5	<5	<5	<5	<5	<5	<13	<5	<5	<5
2-Hexanone	6200	26000	38	---	<10	<10	<10	<10	<5000	<10	<10	<10	<10	<200	<2000	<10	<10	<10	<10	<10	<10	<10	<10	<25	<10	<10	<10
Benzyl Chloride	2.5	11	0.089	---	<2	<2	<2	<2	<1000	<2	<2	<2	<2	<40	<400	<2	<2	<2	<2	<2	<2	<2	<2	<5	<2	<2	<2
Bromochloromethane	560	2400	83	---	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
Bromodichloromethane	0.69	3	0.13	5.5	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
Bromoform	85	370	3.3	43	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
Carbon Disulfide	1000	4300	810	---	<2	<2	<2	<2	<1000	<2	<2	<2	<2	<40	<400	<2	<2	<2	<2	<2	<2	<2	<2	<5	<2	<2	<2
Carbon Tetrachloride	0.34	1.5	5	2.3	<1	<1	<1	<1	<500	<1 J	<1	<1	<1 J	<20	<200	<1	<1	<1	<1	<1	<1 J	<1	<1	<2.5	<1	<1	<1 J
Chlorobenzene	310	1300	100	100	<1	<1	<1	<1	<500	<1	<1	**0.38 J**	**0.34 J**	<20	<200	**0.45 J**	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	**0.46 J**
Chloroethane	20000	82000	21000	---	<2	<2	<2	<2	<1000	<2	<2	<2	<2	<40	<400	<2	<2	<2 J	<2 J	<2	<2	<2	<2	<5	<2	<2	<2
Chloroform	0.66	2.9	8	57	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
Chloromethane	230	960	190	---	<2	<2	<2	<2	<1000	<2	<2	<2	<2	<40	<400	<2	<2	<2	<2	<2	<2	<2	<2	<5	<2	<2	<2
cis-1,2-Dichloroethylene	---	---	70	70	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
cis-1,3-Dichloropropene[2]	---	---	0.47	3.4	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
Cyclohexane	820	3500	13000	---	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
Dibromochloromethane	---	---	0.87	4	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
Dichlorodifluoromethane	6	25	200	---	<2	<2	<2	<2	<1000	<2	<2	<2	<2	<40	<400	<2	<2	<2	<2	<2	<2	<2	<2	<5	<2	<2	<2
Freon 113	1200	5100	55000	---	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	**11.8**	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
Hexachlorobutadiene	0.21	0.93	0.14	4.4	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Isopropylbenzene	630	2600	450	---	**49.4**	<1	**1.1**	**0.56 J**	<500	<1	<1	**26**	**1.2**	**34.9**	**385**	**45.1**	**45.1**	<1	<1	**8**	<1	<1	<1	**3.2**	**36.9**	**38.4**	<1
Methyl Acetate	---	---	20000	---	<20	<20	**7.6 J**	<20	<10000	<20	<20	<20	<20	<400	<4000	<20	<20	<20	<20	<20	<20	<20	<20	<50	<20	<20	<20
Methyl Bromide	15	63	7.5	---	<2	<2	<2	<2	<1000	<2	<2	<2	<2	<40	<400	<2	<2	<2	<2	<2	<2	<2	<2	<5	<2	<2	<2
Methyl Tert Butyl Ether	370	1600	14	14	**128**	**0.55 J**	**6.3**	**3.6**	<500	**1.2**	**1.4**	**0.51 J**	**4.5**	<20	<200	**4.5**	**4.5**	<1	**1.3**	**0.61 J**	**0.74 J**	**0.85 J**	**0.43 J**	<2.5	<1	<1	**2.9**
Methylcyclohexane	---	---	---	---	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
Methylene Chloride	630	7600	5	46	<5	<5	<5	<5	<2500	<5	<5	<5	<5	<100	**976 J**	<5	<5	<5	<5	<5	<5	<5	<5	<13	<5	<5	<5
p-Isopropyl Toluene	---	---	---	---	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
Styrene	7000	29000	100	---	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
tert-Amyl Alcohol	4100	17000	6.3	---	**10.6 J**	<20	<20	<20	<10000	<20	<20	**6.4 J**	<20	<400	<4000	**6.8 J**	**6.8 J**	<20	<20	<20	<20	<20	<20	<50	<20	<20	<20
tert-Butyl Alcohol	---	---	---	1400	**386**	<20	**36.2**	<20	<10000	<20	<20	<20	**32**	<400	<4000	**33.3**	**33.3**	<20	<20	**6.2 J**	<20	<20	<20	<50	<20	<20	<20
Tetrachloroethylene	12	50	5	5	<1	<1	<1	<1	<500	<1 J	<1	<1	<1 J	<20	<200	<1	<1	<1	<1	<1	<1 J	<1	<1	<2.5	<1	<1	<1 J
Tetrahydrofuran	590000	2500000	3400	---	<5	<5	<5	<5	<2500	<5	<5	<5	<5	<100	<1000	<5	<5	<5	<5	<5	<5	<5	<5	<13	<5	<5	<5
trans-1,2-Dichloroethylene	---	---	100	100	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
trans-1,3-Dichloropropene[2]	---	---	0.47	3.4	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
Trichloroethylene	0.94	5.9	5	5	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
Trichlorofluoromethane	---	---	5200	---	<2	<2	<2	<2	<1000	<2	<2	<2	<2	<40	<400	<2	<2	<2	<2	<2	<2	<2	<2	<5	<2	<2	<2
Vinyl Chloride	0.13	2.1	2	0.25	<1	<1	<1	<1	<500	<1	<1	<1	<1	<20	<200	<1	<1	<1	<1	<1	<1	<1	<1	<2.5	<1	<1	<1
Low Molecular Weight Alcohols Analytical Results (ug/L)																											
Ethanol	---	---	---	10000	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100 J	<100 J	<100	<100	<100	<100	<100	<100	<100	<100
Isobutyl Alcohol	---	---	5900	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100 J	<100 J	<100	<100	<100	<100	<100	<100	<100	<100
n-Butyl Alcohol	---	---	2000	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100 J	<100 J	<100	<100	<100	<100	<100	<100	<100	<100
n-Propyl Alcohol	---	---	---	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100 J	<100 J	<100	<100	<100	<100	<100	<100	<100	<100
sec-Butyl Alcohol	58000000	---	24000	---	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100 J	<100 J	<100	<100	<100	<100	<100	<100	<100	<100

Table 4
Building 5 Area Groundwater Analytical Results - March 2017

Parameter	USEPA Residential Groundwater Concentration for Vapor Intrusion	USEPA Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or June 2017 Tap Water RSL	April 2016 PRWQS[1]	A-1R4 3/22/2017	A-2R2 3/22/2017	D-1R 3/21/2017	E-1R 3/21/2017	G-1R3 3/21/2017	MW-11 3/20/2017	S-28 3/17/2017	S-29R 3/22/2017	S-30 3/20/2017	S-31R2 3/22/2017	S-32 3/16/2017	S-33 3/16/2017	S-34 3/16/2017	S-35D 3/9/2017	S-35S 3/9/2017	S-36 3/16/2017	S-37 3/17/2017	S-38 3/21/2017	S-39D 3/15/2017	S-39S 3/15/2017	UP-1 3/17/2017	UP-1 DUP 3/17/2017	UP-2 3/17/2017
Polycyclic Aromatic Hydrocarbons Analytical Results (ug/L)																											
1-Methylnaphthalene	---	---	1.1	---	<0.99	<0.95	<0.97	<0.97	<1 J	<0.99	<0.98	<0.97	<0.96	<1	<1	<0.98	<1	<0.96	<1	<0.96	<0.96	<0.96	<0.98	<1	<1	<0.98	<1
2-Methylnaphthalene	---	---	36	---	**0.58 J**	<0.95	<0.97	<0.97	<24 J	<0.99	<0.98	<0.97	<0.96	<1	<1	<4.9	<1	<0.96	<1	<0.96	<0.96	<0.96	<0.98	<1	<1	<0.98	<1
Acenaphthene	---	---	530	670	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Acenaphthylene	---	---	---	---	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Anthracene	---	---	1800	8300	**18.1**	<4.8	**19.6**	<4.9	<24	<5	<4.9	**16.4**	<4.8	**1.9 J**	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	**1.7 J**	**1.3 J**	**1.4 J**	<5
Benzo(a)anthracene	---	---	0.03	0.038	<0.2	<0.19	<0.19	<0.19	<0.2 J	<0.2	<0.2	<0.19	<0.19	<0.2	<0.2	<4.9	<0.2	<0.19	<0.2	<0.19	<0.19	<0.19	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	---	---	0.2	0.038	<0.2	<0.19	<0.19	<0.19	<0.2 J	<0.2	<0.2	<0.19	<0.19	<0.2	<0.2	<4.9	<0.2	<0.19	<0.2	<0.19	<0.19	<0.19	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(b)fluoranthene	---	---	0.25	0.038	<0.2	<0.19	<0.19	<0.19	<0.2 J	<0.2	<0.2	<0.19	<0.19	<0.2	<0.2	<4.9	<0.2	<0.19	<0.2	<0.19	<0.19	<0.19	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	---	---	---	210	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Benzo(k)fluoranthene	---	---	2.5	0.038	<0.2	<0.19	<0.19	<0.19	<0.2 J	<0.2	<0.2	<0.19	<0.19	<0.2	<0.2	<4.9	<0.2	<0.19	<0.2	<0.19	<0.19	<0.19	<0.2	<0.2	<0.2	<0.2	<0.2
Chrysene	---	---	25	0.038	<0.2	<0.19	<0.19	<0.19	<0.2 J	<0.2	<0.2	<0.19	<0.19	<0.2	<0.2	<4.9	<0.2	<0.19	<0.2	<0.19	<0.19	<0.19	<0.2	<0.2	<0.2	<0.2	<0.2
Dibenz(a,h)anthracene	---	---	0.025	0.038	<0.2	<0.19	<0.19	<0.19	<0.2 J	<0.2	<0.2	<0.19	<0.19	<0.2	<0.2	<4.9	<0.2	<0.19	<0.2	<0.19	<0.19	<0.19	<0.2	<0.2	<0.2	<0.2	<0.2
Fluoranthene	---	---	800	130	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Fluorene	---	---	290	1100	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Indeno(1,2,3-cd)pyrene	---	---	0.25	0.038	<0.2	<0.19	<0.19	<0.19	<0.2 J	<0.2	<0.2	<0.19	<0.19	<0.2	<0.2	<4.9	<0.2	<0.19	<0.2	<0.19	<0.19	<0.19	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	3.2	14	0.17	0.17	**0.62 J**	<0.95	<0.97	<0.97	<1 J	<0.99	<0.98	<0.97	<0.96	<1	**0.4 J**	<0.98	<1	<0.96	<1	<0.96	<0.96	<0.96	<0.98	<1	<1	<0.98	<1
Phenanthrene	---	---	---	18	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	**1.5 J**	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Pyrene	---	---	120	830	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Volatile Petroleum Hydrocarbons Analytical Results (ug/L)																											
C5-C8 Aliphatics (Unadj.)	---	---	1300	---	**465**	<100	<100	<100 J	<100	<100 J	<100	<100	<100	<100	**38.4 J**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C9-C10 Aromatics (Unadj.)	---	---	5.5	---	**49.1 J**	<100	<100	<100 J	**93.5 J**	<100 J	<100	<100	<100	**42.8 J**	**262**	**35.6 J**	**35.6 J**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C9-C12 Aliphatics (Unadj.)	---	---	100	---	**412**	<100	<100	<100 J	<50000	<100 J	<100	<100	<100	**3080**	**75400**	<100	<100	<100	<100	<100	<100	<100	<100	**394**	<100	<100	<100
Extractable Petroleum Hydrocarbons Analytical Results (ug/L)																											
C11-C22 Aromatics (Unadj.)	---	---	5.5	---	<190	**185 J**	**314**	<200	<200	<200	<200	**133 J**	<200	**277**	<200 J	<200 J	<200 J	<200	<200	<190 J	<200 J	<200	<200	**151 J**	<200 J	<200	<200 J
C19-C36 Aliphatics	---	---	60000	---	<190	<190	<190	<200	**128 J**	<200	<200	<190	<200	<200	**50.2 J**	<200	<200	**50.4 J**	**51.6 J**	<190	<200	<200	<200	<200	<200	<200	<200
C9-C18 Aliphatics	---	---	100	---	<190	<190	<190	<200	**249**	<200	<200	<190	<200	<200	**95.3 J**	<200	<200	<200	<200	<190	<200	<200	<200	<200	<200	<200	<200
Semivolatile Organic Compounds Analytical Results (ug/L)																											
1,1'-Biphenyl	23	95	0.83	---	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
1,2,4,5-Tetrachlorobenzene	---	---	1.7	---	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
2,3,4,6-Tetrachlorophenol	---	---	240	---	<5 J	<4.8 J	<4.9	<4.9	<24 J	<5	<4.9	<4.9	<4.8	<5 J	<50 J	<4.9 J	<5 J	<4.8	<5	<4.8 J	<4.8	<4.8	<4.8	<4.8 R	<5	<4.9	<5
2,4,5-Trichlorophenol	---	---	1200	---	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8 R	<5	<4.9	<5
2,4,6-Trichlorophenol	---	---	4.1	14	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
2,4-Dichlorophenol	---	---	46	77	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
2,4-Dimethylphenol	---	---	360	380	**4.7 J**	<4.8	<4.9	<4.9	**6.8 J**	<5	<4.9	<4.9	<4.8	**1.1 J**	**53.2**	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	**2.5 J**	<5	<4.9	<5
2,4-Dinitrophenol	---	---	39	69	<25 J	<24 J	<24	<24	<120 J	<25	<25	<24	<24	<25 J	<250	<25	<25	<24	<25	<24	<24	<24	<24	<24	<25	<25	<25
2,4-Dinitrotoluene	---	---	0.24	1.1	<5	<4.8	<4.9	<4.9	<24 J	<5	<4.9	<4.9	<4.8	<5	<50 J	<4.9 J	<5 J	<4.8	<5	<4.8 J	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
2,6-Dinitrotoluene	---	---	0.049	---	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
2-Chloronaphthalene	---	---	750	1000	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
2-Chlorophenol	---	---	91	81	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
2-Methylphenol	---	---	930	---	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
2-Nitroaniline	---	---	190	---	<5 J	<4.8 J	<4.9	<4.9	<24 J	<5	<4.9	<4.9	<4.8	<5 J	<50 J	<4.9 J	<5 J	<4.8	<5 J	<4.8 J	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
2-Nitrophenol	---	---	---	---	<5 J	<4.8 J	<4.9	<4.9	<24 J	<5	<4.9	<4.9	<4.8	<5 J	<50 J	<4.9 J	<5 J	<4.8	<5	<4.8 J	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
3&4-Methylphenol[3]	---	---	930	---	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
3,3'-Dichlorobenzidine	---	---	0.13	0.21	<5	<4.8	<4.9 J	<4.9 J	<24	<5 J	<4.9	<4.9	<4.8 J	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8 J	<4.8 J	<4.8 J	<5	<4.9	<5
3-Nitroaniline	---	---	---	---	<5	<4.8	<4.9 J	<4.9 J	<24	<5 J	<4.9	<4.9	<4.8 J	<5	<50	<4.9	<5	<4.8 J	<5	<4.8	<4.8	<4.8 J	<4.8 J	<4.8 J	<5	<4.9	<5
4,6-Dinitro-2-Methylphenol	---	---	1.5	13	<9.9 J	<9.5 J	<9.7	<9.7	<48 J	<9.9	<9.8	<9.7	<9.6	<10 J	<100 J	<9.8 J	<10 J	<9.6	<10	<9.6 J	<9.6	<9.6	<9.6	<9.6	<10	<9.8	<10
4-Bromophenyl Phenyl Ether	---	---	---	---	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
4-Chloro-3-Methylphenol	---	---	1400	---	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
4-Chloroaniline	---	---	0.37	---	<5	<4.8	<4.9 J	<4.9 J	<24	<5 J	<4.9	<4.9	<4.8 J	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8 J	<4.8 J	<4.8 J	<5	<4.9	<5
4-Chlorophenyl Phenyl Ether	---	---	---	---	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
4-Nitroaniline	---	---	3.8	---	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
4-Nitrophenol	---	---	---	---	<25	<24	<24	<24	<120	<25	<25	<24	<24	<25	<250	<25	<25	<24	<25	<24	<24	<24	<24	<24	<25	<25	<25
Acetophenone	---	---	1900	---	<5	<4.8	<4.9	<4.9	**4.1 J**	<5	<4.9	<4.9	<4.8	**9.3**	**27.9 J**	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Atrazine	---	---	3	---	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Benzaldehyde	---	---	19	---	**6.3 J**	<24	<24	<24	<120	<25	<25	<24	<24	<25	<250	<25	<25	<24	<25	<24	<24	<24	<24	<24	<25	<25	<25
Bis(2-chloroethoxy)methane	---	---	59	---	<5 J	<4.8 J	<4.9	<4.9	<24 J	<5	<4.9 J	<4.9	<4.8	<5 J	<50	<4.9	<5	<4.8 J	<5 J	<4.8	<4.8 J	<4.8	<4.8	<4.8	<5 J	<4.9 J	<5 J
Bis(2-chloroethyl)ether	8.4	37	0.014	0.3	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
bis(2-Chloroisopropyl)ether	---	---	710	1400	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Bis(2-ethylhexyl)phthalate	---	---	6	12	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Butyl Benzyl Phthalate	---	---	16	1500	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Caprolactam	---	---	9900	---	<9.9	<9.5	<9.7	<9.7	<48	<9.9	<9.8	<9.7	<9.6	<10	<100	<9.8	<10	<9.6	<10	<9.6	<9.6	<9.6	<9.6	<9.6	<10	<9.8	<10
Carbazole	---	---	---	---	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Dibenzofuran	---	---	7.9	---	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Diethyl Phthalate	---	---	15000	17000	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Dimethyl Phthalate	---	---	---	270000	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Di-n-butyl Phthalate	---	---	900	2000	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Di-n-octyl Phthalate	---	---	200	---	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Hexachlorobenzene	0.058	0.25	1	0.0028	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Hexachlorocyclopentadiene	0.042	0.18	50	40	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8 R	<5	<4.9	<5
Hexachloroethane	1.1	4.8	0.33	14	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Isophorone	---	---	78	350	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Nitrobenzene	50	220	0.14	17	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
N-Nitrosodi-n-propylamine	---	---	0.011	0.05	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
N-Nitrosodiphenylamine	---	---	12	---	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8	<5	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5
Pentachlorophenol	---	---	1	1	<25	<24	<24	<24	<120	<25	<25	<24	<24	<25	<250	<25	<25	<24	<25	<24	<24	<24	<24	<24	<25	<25	<25
Phenol	---	---	5800	10000	<5	<4.8	<4.9	<4.9	<24	<5	<4.9	<4.9	<4.8	<5	<50	<4.9	<5	<4.8 J	<5 J	<4.8	<4.8	<4.8	<4.8	<4.8	<5	<4.9	<5

Table 4
Building 5 Area Groundwater Analytical Results - March 2017

Parameter	USEPA Residential Groundwater Concentration for Vapor Intrusion	USEPA Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or June 2017 Tap Water RSL	April 2016 PRWQS[1]	A-1R4 3/22/2017	A-2R2 3/22/2017	D-1R 3/21/2017	E-1R 3/21/2017	G-1R3 3/21/2017	MW-11 3/20/2017	S-28 3/17/2017	S-29R 3/22/2017	S-30 3/20/2017	S-31R2 3/22/2017	S-32 3/16/2017	S-33 3/16/2017	S-34 3/16/2017	S-35D 3/9/2017	S-35S 3/9/2017	S-36 3/16/2017	S-37 3/17/2017	S-38 3/21/2017	S-39D 3/15/2017	S-39S 3/15/2017	UP-1 3/17/2017	UP-1 DUP 3/17/2017	UP-2 3/17/2017
Organochlorine Pesticide Analytical Results (ug/L)																											
4,4'-DDD	---	---	0.032	---	<0.039	<0.038	<0.019	<0.02	<0.019	<0.08	<0.08	<0.02	<0.08	<0.039	<0.08	<0.08	<0.08	<0.077	<0.08	<0.08	<0.08	<0.019	<0.08	<0.08	<0.08	<0.08	<0.08
4,4'-DDE	9.9	---	0.046	---	<0.039	<0.038	**0.071**	<0.02	<0.019	<0.08	<0.08	<0.02	<0.08	<0.039	<0.08	<0.08	<0.08	<0.077	<0.08	<0.08	<0.08	<0.019	<0.08	<0.08	<0.08	<0.08	<0.08
4,4'-DDT	---	---	0.23	0.0022	<0.039	<0.038	<0.019	<0.02	<0.019	<0.08	<0.08	<0.02	<0.08	<0.039	<0.08	<0.08	<0.08	<0.077	<0.08	<0.08	<0.08	<0.019	<0.08	<0.08	<0.08	<0.08	<0.08
Aldrin	0.19	0.85	0.00092	0.00049	<0.02	<0.019	<0.0097	<0.0098	<0.0097	<0.04	<0.04	<0.0098	<0.04	<0.02	<0.04	<0.04	<0.04	<0.038	<0.04	<0.04	<0.04	<0.0095	<0.04	<0.04	<0.04	<0.04	<0.04
alpha-BHC	---	---	0.0072	---	<0.02	<0.019	<0.0097	<0.0098	<0.0097	<0.04	<0.04	<0.0098	<0.04	<0.02	<0.04	<0.04	<0.04	<0.038	<0.04 J	<0.04	<0.04	<0.0095	<0.04	<0.04	<0.04	<0.04	<0.04
alpha-Chlordane[4]	---	---	2	0.008	<0.02	**0.0099 J**	**0.0022 J**	<0.0098	<0.0097	<0.04	**0.046**	<0.0098	<0.04	<0.02	<0.04	<0.04	<0.04	<0.038	<0.04	**0.041**	<0.04	**0.015**	<0.04	<0.04	<0.04	<0.04	**0.025 J**
beta-BHC	---	---	0.025	0.091	<0.02	<0.019	<0.0097	<0.0098	**0.0041 J**	<0.04	<0.04	<0.0098	<0.04	<0.02	<0.04	<0.04	<0.04	<0.038	<0.04	<0.04	<0.04	<0.0095	<0.04	<0.04	<0.04	<0.04	<0.04
delta-BHC	---	---	---	---	<0.02	<0.019	<0.0097	<0.0098	<0.0097	<0.04	<0.04	<0.0098	<0.04	<0.02	**0.025 J**	<0.04	<0.04	<0.038	<0.04	<0.04	<0.04	<0.0095	<0.04	<0.04	<0.04	<0.04	<0.04
Dieldrin	---	---	0.0018	0.00052	**0.015 J**	<0.019	**0.0034 J**	<0.0098	<0.0097	<0.04	<0.04	<0.0098	<0.04	<0.02	<0.04	<0.04	<0.04	<0.038	<0.04	<0.04	<0.04	<0.0095	<0.04	<0.04	<0.04	<0.04	<0.04
Endosulfan I[5]	---	---	100	62	<0.02	<0.019	**0.0022 J**	<0.0098	<0.0097	<0.04	<0.04	<0.0098	<0.04	<0.02	<0.04	<0.04	<0.04	<0.038	<0.04	<0.04	<0.04	<0.0095	<0.04	<0.04	<0.04	<0.04	<0.04
Endosulfan II[5]	---	---	100	62	<0.02	<0.019	<0.0097	<0.0098	**0.0038 J**	<0.04	<0.04	**0.025**	<0.04	<0.02	<0.04	<0.04	<0.04	<0.038	<0.04	<0.04	<0.04	<0.0095	<0.04	<0.04	<0.04	<0.04	<0.04
Endosulfan Sulfate[6]	---	---	100	62	<0.039	<0.038	<0.019	<0.02	<0.019	<0.08	<0.08	<0.02	<0.08	<0.039	<0.08	<0.08	<0.08	<0.077	<0.08	<0.08	<0.08	<0.019	<0.08	<0.08	<0.08	<0.08	<0.08
Endrin	---	---	2	0.059	<0.039	<0.038	**0.0057 J**	<0.02	<0.019	<0.08	<0.08	<0.02	<0.08	<0.039	<0.08	<0.08	<0.08	<0.077	<0.08	<0.08	<0.08	<0.019	<0.08	<0.08	<0.08	<0.08	<0.08
Endrin Aldehyde	---	---	---	0.29	<0.039	**0.1**	**0.011 J**	**0.0085 J**	<0.019	<0.08	<0.08	**0.013 J**	<0.08	<0.039	<0.08	<0.08	<0.08	<0.077	<0.08	<0.08	<0.08	**0.0041 J**	<0.08	**0.019 J**	<0.08	<0.08	<0.08
Endrin Ketone	---	---	---	---	<0.039	<0.038	<0.019	<0.02	<0.019	<0.08	<0.08 J	<0.02	<0.08	<0.039	<0.08	<0.08 J	<0.08 J	**0.014 J**	<0.08	<0.08 J	<0.08 J	<0.019	<0.08	<0.08	<0.08 J	<0.08 J	<0.08 J
gamma-BHC (Lindane)	---	---	0.2	---	<0.02	**0.0052 J**	<0.0097	<0.0098	<0.0097	<0.04	<0.04	<0.0098	<0.04	<0.02	<0.04	<0.04	<0.04	<0.038	<0.04	<0.04	<0.04	<0.0095	<0.04	<0.04	<0.04	<0.04	<0.04
gamma-Chlordane[4]	---	---	2	0.008	<0.02	<0.019	**0.011**	<0.0098	<0.0097	<0.04	<0.04	<0.0098	<0.04	<0.02	<0.04	**0.017 J**	**0.013 J**	<0.038	<0.04	<0.04	<0.04	<0.0095	<0.04	<0.04	<0.04	<0.04	<0.04
Heptachlor	0.11	0.49	0.4	0.00079	<0.02	**0.006 J**	<0.0097	<0.0098	<0.0097	<0.04	<0.04	<0.0098	<0.04	<0.02	<0.04	<0.04	<0.04	<0.038	<0.04	<0.04	<0.04	<0.0095	<0.04	<0.04	<0.04	<0.04	<0.04
Heptachlor Epoxide	0.7	3.1	0.2	0.00039	<0.02	<0.019	**0.0058 J**	<0.0098	<0.0097	<0.04	<0.04	<0.0098	<0.04	<0.02	<0.04	<0.04	<0.04	<0.038	<0.04	<0.04	<0.04	<0.0095	<0.04	<0.04	<0.04	<0.04	<0.04
Methoxychlor	---	---	40	40	**0.024 J**	<0.038	<0.019	<0.02	<0.019	<0.08	<0.08	<0.02	<0.08	<0.039	<0.08	<0.08	<0.08	<0.077	<0.08	<0.08	<0.08	<0.019	<0.08	<0.08	<0.08	<0.08	<0.08
Toxaphene	---	---	3	0.0028	<0.98	<0.96	<0.49	<0.49	<0.49	<2	<2	<0.49	<2	<0.98	<2	<2	<2	<1.9	<2	<2	<2	<0.48	<2	<2	<2	<2	<2

Notes:

[1] April 2016 Puerto Rico Water Quality Standards Regulation for Class SG groundwater.

[2] USEPA screening level and PRWQS are for 1,3-Dichloropropene. The USEPA and PREQB have not specifically established screening levels for cis-1,3-Dichloropropene or trans-1,3-Dichloropropene.

[3] The Tapwater screening level applied to 3&4-Methylphenol is the screening level for 3-Methylphenol. This is a conservative level; it is lower than the screening level for 4-Methylphenol.

[4] USEPA screening level and PRWQS is for Chlordane. The USEPA and PREQB has not specifically established a screening level for alpha-Chlordane or gamma-Chlordane.

[5] USEPA screening level and PRWQS is for Endosulfan. USEPA and PREQB has not specifically established a screening level for Endosulfan-I and Endosulfan-II.

[6] USEPA screening level is for Endosulfan. USEPA has not specifically established a screening level for Endosulfan Sulfate.

--- USEPA and/or PREQB have not developed a screening level for this compound.

Detected values are shown in bold.

Values which exceed a Drinking Water Quality Standard (USEPA MCL, USEPA Tapwater RSL, PRWQS) and/or a USEPA Groundwater Concentration for Vapor Intrusion are shown highlighted yellow.

Sample results with elevated reporting limits, due to sample dilution from the presence of other target compounds, that are above USEPA and PREQB groundwater action levels are shaded gray.

R - Data rejected.

J - Indicates an estimated value.

Table 5
Release Assessment Phase 1 Groundwater Analytical Results - March 2017

Parameter	USEPA Residential Groundwater Concentration for Vapor Intrusion	USEPA Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or June 2017 Tap Water RSL	April 2016 PRWQS[1]	MW-20D 3/8/2017	MW-20S 3/8/2017	MW-21S 3/6/2017	MW-22S 3/6/2017	MW-23S 3/6/2017	RA-10D 3/8/2017	RA-10S 3/8/2017	S-40D 3/15/2017	S-40S 3/15/2017	S-41D 3/9/2017	S-41S 3/9/2017	S-42D 3/7/2017	S-42S 3/7/2017	S-43D 3/7/2017	S-43S 3/7/2017
Volatile Organic Compounds Analytical Results (ug/L)																			
1,1,1-Trichloroethane	6000	25000	200	200	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	2.4	11	0.076	1.7	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	4	18	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	6.2	27	2.8	---	<1	<1	**0.5 J**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethylene	160	690	7	7	<1	<1	**0.86 J**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-Trichlorobenzene	---	---	7	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,4-Trichlorobenzene	25	110	70	35	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2,4-Trimethylbenzene	21	89	56	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dibromo-3-chloropropane	0.02	0.24	0.2	---	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dibromoethane	0.13	0.58	0.05	0.052	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dichlorobenzene	1900	8100	600	420	<1	<1	**1**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	1.8	7.8	5	3.8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	1.9	8.4	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Butadiene	0.027	0.12	0.018	---	<2	<2 J	<2	<2	<2	<2 J	<2 J	<2 J	<2 J	<2 J	<2 J	<2	<2	<2	<2
1,3-Dichlorobenzene	---	---	---	320	<1	<1	**0.38 J**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dichlorobenzene	1.9	8.3	75	63	<1	<1	**0.36 J**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dioxane	2200	9600	0.46	---	**23.3 J**	**2.6**	**0.57**	<0.29	<0.3	**1720**	**1640**	**2.9**	**8.7**	**1.2**	**1.8**	**1990**	**2540**	**2560**	**2600**
2-Butanone (MEK)	1800000	7500000	5600	---	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2-Hexanone	6200	26000	38	---	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Acetone	18000000	77000000	14000	---	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	1.3	5.6	5	5	<1	<1	<1	<1	<1	**0.59 J**	<1	<1	<1	<1	<1	<1	<1	**0.4 J**	**0.4 J**
Benzyl Chloride	2.5	11	0.089	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Bromochloromethane	560	2400	83	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	0.69	3	0.13	5.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	85	370	3.3	43	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon Disulfide	1000	4300	810	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Carbon Tetrachloride	0.34	1.5	5	2.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	310	1300	100	100	<1	<1	<1	<1	<1	**0.26 J**	<1	<1	<1	<1	<1	**0.3 J**	**0.28 J**	**6.2**	**12**
Chloroethane	20000	82000	21000	---	<2 J	<2 J	<2	<2	<2	<2 J	<2 J	<2	<2	<2 J	<2 J	<2	<2	<2	<2
Chloroform	0.66	2.9	8	57	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	230	960	190	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
cis-1,2-Dichloroethylene	---	---	70	70	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene[2]	---	---	0.47	3.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cyclohexane	820	3500	13000	---	**0.59 J**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	**0.49 J**	**0.41 J**	**4.5**	**5.5**
Dibromochloromethane	---	---	0.87	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	6	25	200	---	<2	<2	**1 J**	<2	<2	<2	<2	<2	<2	<2	<2	**2.3**	**2.9**	<2	<2
Ethylbenzene	2.6	12	700	530	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Freon 113	1200	5100	55000	---	<1	<1	**23.9**	<1	<1	<1	<1	<1	<1	<1	<1	**25.1**	**2.8**	**5.6**	<1
Hexachlorobutadiene	0.21	0.93	0.14	4.4	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Isopropylbenzene	630	2600	450	---	<1	<1	<1	<1	<1	**11.2**	<1	<1	**0.24 J**	<1	<1	<1	<1	**4.2**	**10.1**
Methyl Acetate	---	---	20000	---	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Methyl Bromide	15	63	7.5	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Methyl Isobutyl Ketone (MIBK)	420000	1800000	6300	---	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Methyl Tert Butyl Ether	370	1600	14	14	**17.7**	**1.7**	<1	<1	<1	**4.8**	**4.1**	<1	**0.27 J**	<1	<1	**0.78 J**	**1.5**	**10.4**	**9.7**
Methylcyclohexane	---	---	---	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methylene Chloride	630	7600	5	46	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
p-Isopropyl Toluene	---	---	---	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Styrene	7000	29000	100	---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
tert-Amyl Alcohol	4100	17000	6.3	---	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	**8.6 J**
tert-Butyl Alcohol	---	---	---	1400	**796**	<20	<20	<20	<20	**79.7**	<20	<20	<20	<20	<20	<20	<20	**120**	**182**
Tetrachloroethylene	12	50	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tetrahydrofuran	590000	2500000	3400	---	**2.7 J**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	**2 J**	**2 J**
Toluene	15000	63000	1000	1000	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethylene	---	---	100	100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	**0.41 J**	**0.34 J**	**0.26 J**	<1
trans-1,3-Dichloropropene[2]	---	---	0.47	3.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichloroethylene	0.94	5.9	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	---	---	5200	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Vinyl Chloride	0.13	2.1	2	0.25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylene (total)	290	1200	10000	10000	<2	<2	<2	<2	<2	**0.56 J**	<2	<2	<2	<2	<2	<2	<2	<2	<2

Table 5
Release Assessment Phase 1 Groundwater Analytical Results - March 2017

Parameter	USEPA Residential Groundwater Concentration for Vapor Intrusion	USEPA Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or June 2017 Tap Water RSL	April 2016 PRWQS[1]	MW-20D 3/8/2017	MW-20S 3/8/2017	MW-21S 3/6/2017	MW-22S 3/6/2017	MW-23S 3/6/2017	RA-10D 3/8/2017	RA-10S 3/8/2017	S-40D 3/15/2017	S-40S 3/15/2017	S-41D 3/9/2017	S-41S 3/9/2017	S-42D 3/7/2017	S-42S 3/7/2017	S-43D 3/7/2017	S-43S 3/7/2017
Low Molecular Weight Alcohols Analytical Results (ug/L)																			
Ethanol	---	---	---	10000	<100 J	<100 J	<100	<100	<100	<100 J	<100 J	<100	<100	<100 J	<100 J	<100	<100	<100	<100
Isobutyl Alcohol	---	---	5900	---	<100 J	<100 J	<100	<100	<100	<100 J	<100 J	<100	<100	<100 J	<100 J	<100	<100	<100	<100
Isopropyl Alcohol	450000	1900000	410	---	<100 J	<100 J	<100	<100	<100	<100 J	<100 J	<100	<100	<100 J	<100 J	<100	<100	<100	<100
Methanol	86000000	360000000	20000	---	<200 J	<200 J	<200	<200	<200	<200 J	<200 J	<200	<200	<200 J	<200 J	<200	<200	<200	<200
n-Butyl Alcohol	---	---	2000	---	<100 J	<100 J	<100	<100	<100	<100 J	<100 J	<100	<100	<100 J	<100 J	<100	<100	<100	<100
n-Propyl Alcohol	---	---	---	---	<100 J	<100 J	<100	<100	<100	<100 J	<100 J	<100	<100	<100 J	<100 J	<100	<100	<100	<100
sec-Butyl Alcohol	58000000	---	24000	---	<100 J	<100 J	<100	<100	<100	<100 J	<100 J	<100	<100	<100 J	<100 J	<100	<100	<100	<100
Polycyclic Aromatic Hydrocarbons Analytical Results (ug/L)																			
1-Methylnaphthalene	---	---	1.1	---	<1 J	<1	<0.98	<0.96	<1	<1	<0.98	<0.98	<1	<0.98	<0.97	<0.96	<0.98	<0.96	<1.1
2-Methylnaphthalene	---	---	36	---	<1 J	<1	<0.98	<0.96	<1	<1	<0.98	<0.98	<1	<0.98	<0.97	<0.96	<0.98	<0.96	<1.1
Acenaphthene	---	---	530	670	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Acenaphthylene	---	---	---	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Anthracene	---	---	1800	8300	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	**1.3 J**	**1.2 J**
Benzo(a)anthracene	---	---	0.03	0.038	<0.2 J	<0.2	<0.2	<0.19	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.19	<0.19	<0.2	<0.19	<0.21
Benzo(a)pyrene	---	---	0.2	0.038	<0.2 J	<0.2	<0.2	<0.19	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.19	<0.19	<0.2	<0.19	<0.21
Benzo(b)fluoranthene	---	---	0.25	0.038	<0.2 J	<0.2	<0.2	<0.19	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.19	<0.19	<0.2	<0.19	<0.21
Benzo(g,h,i)perylene	---	---	---	210	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Benzo(k)fluoranthene	---	---	2.5	0.038	<0.2 J	<0.2	<0.2	<0.19	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.19	<0.19	<0.2	<0.19	<0.21
Chrysene	---	---	25	0.038	<0.2 J	<0.2	<0.2	<0.19	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.19	<0.19	<0.2	<0.19	<0.21
Dibenz(a,h)anthracene	---	---	0.025	0.038	<0.2 J	<0.2	<0.2	<0.19	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.19	<0.19	<0.2	<0.19	<0.21
Fluoranthene	---	---	800	130	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Fluorene	---	---	290	1100	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Indeno(1,2,3-cd)pyrene	---	---	0.25	0.038	<0.2 J	<0.2	<0.2	<0.19	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.19	<0.19	<0.2	<0.19	<0.21
Naphthalene	3.2	14	0.17	0.17	<1 J	<1	<0.98	<0.96	<1	<1	<0.98	<0.98	<1	<0.98	<0.97	<0.96	<0.98	<0.96	<1.1
Phenanthrene	---	---	---	18	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Pyrene	---	---	120	830	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Volatile Petroleum Hydrocarbons Analytical Results (ug/L)																			
C5-C8 Aliphatics (Unadj.)	---	---	1300	---	<100 J	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	**36.9 J**	<100	**58 J**	**65.3 J**
C9-C10 Aromatics (Unadj.)	---	---	5.5	---	<100 J	<100	<100	<100	<100	**57.6 J**	<100	<100	<100	<100	<100	<100	<100	<100	**63.5 J**
C9-C12 Aliphatics (Unadj.)	---	---	100	---	<100 J	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	**65.6 J**
Extractable Petroleum Hydrocarbons Analytical Results (ug/L)																			
C11-C22 Aromatics (Unadj.)	---	---	5.5	---	**104 J**	<190	<200	<200	<190	<190	<190	<200	<200	<200	<200	<190	<200	<190	<200
C19-C36 Aliphatics	---	---	60000	---	**64 J**	<190	<200	<200	<190	<190	<190	<200	<200	<200	<200	<190	<200	<190	<200
C9-C18 Aliphatics	---	---	100	---	<200	<190	<200	<200	<190	<190	<190	<200	<200	<200	<200	<190	<200	<190	<200
Semivolatile Organic Compounds Analytical Results (ug/L)																			
1,1'-Biphenyl	23	95	0.83	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
1,2,4,5-Tetrachlorobenzene	---	---	1.7	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
2,3,4,6-Tetrachlorophenol	---	---	240	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8 J	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
2,4,5-Trichlorophenol	---	---	1200	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
2,4,6-Trichlorophenol	---	---	4.1	14	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
2,4-Dichlorophenol	---	---	46	77	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
2,4-Dimethylphenol	---	---	360	380	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
2,4-Dinitrophenol	---	---	39	69	<25	<25	<25	<24	<25	<25	<25	<24 J	<24	<25	<24	<24	<25	<24	<26
2,4-Dinitrotoluene	---	---	0.24	1.1	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
2,6-Dinitrotoluene	---	---	0.049	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
2-Chloronaphthalene	---	---	750	1000	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
2-Chlorophenol	---	---	91	81	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
2-Methylphenol	---	---	930	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
2-Nitroaniline	---	---	190	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
2-Nitrophenol	---	---	---	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
3&4-Methylphenol[3]	---	---	930	---	<5 J	<5 J	<4.9	<4.8	<5	<5 J	<4.9 J	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
3,3'-Dichlorobenzidine	---	---	0.13	0.21	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8 J	<4.8 J	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
3-Nitroaniline	---	---	---	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8 J	<4.8 J	<4.9 J	<4.9 J	<4.8	<4.9	<4.8	<5.3
4,6-Dinitro-2-Methylphenol	---	---	1.5	13	<10	<10	<9.8	<9.6	<10	<10	<9.8	<9.6	<9.6	<9.8	<9.7	<9.6	<9.8	<9.6	<11
4-Bromophenyl Phenyl Ether	---	---	---	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
4-Chloro-3-Methylphenol	---	---	1400	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
4-Chloroaniline	---	---	0.37	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8 J	<4.8 J	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
4-Chlorophenyl Phenyl Ether	---	---	---	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
4-Nitroaniline	---	---	3.8	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
4-Nitrophenol	---	---	---	---	<25	<25	<25	<24	<25	<25	<25	<25	<24	<24	<25	<24	<24	<25	<24	<26
Acetophenone	---	---	1900	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Atrazine	---	---	3	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Benzaldehyde	---	---	19	---	<25	<25	<25	<24	<25	<25	<25	<24	<24	<25	<24	<24	<25	<24	<26
Bis(2-chloroethoxy)methane	---	---	59	---	<5 J	<5 J	<4.9	<4.8	<5	<5 J	<4.9 J	<4.8	<4.8	<4.9 J	<4.9	<4.8	<4.9	<4.8	<5.3
Bis(2-chloroethyl)ether	8.4	37	0.014	0.3	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
bis(2-Chloroisopropyl)ether	---	---	710	1400	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Bis(2-ethylhexyl)phthalate	---	---	6	12	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9 J	<4.8	<4.9	<4.8	<5.3
Butyl Benzyl Phthalate	---	---	16	1500	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Caprolactam	---	---	9900	---	<10	<10	<9.8	<9.6	<10	<10	<9.8	<9.6	<9.6	<9.8	<9.7	<9.6	<9.8	<9.6	<11
Carbazole	---	---	---	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Dibenzofuran	---	---	7.9	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Diethyl Phthalate	---	---	15000	17000	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Dimethyl Phthalate	---	---	---	270000	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3

Table 5
Release Assessment Phase 1 Groundwater Analytical Results - March 2017

Parameter	USEPA Residential Groundwater Concentration for Vapor Intrusion	USEPA Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or June 2017 Tap Water RSL	April 2016 PRWQS[1]	MW-20D 3/8/2017	MW-20S 3/8/2017	MW-21S 3/6/2017	MW-22S 3/6/2017	MW-23S 3/6/2017	RA-10D 3/8/2017	RA-10S 3/8/2017	S-40D 3/15/2017	S-40S 3/15/2017	S-41D 3/9/2017	S-41S 3/9/2017	S-42D 3/7/2017	S-42S 3/7/2017	S-43D 3/7/2017	S-43S 3/7/2017
Di-n-butyl Phthalate	---	---	900	2000	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Di-n-octyl Phthalate	---	---	200	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Hexachlorobenzene	0.058	0.25	1	0.0028	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Hexachlorocyclopentadiene	0.042	0.18	50	40	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Hexachloroethane	1.1	4.8	0.33	14	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Isophorone	---	---	78	350	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Nitrobenzene	50	220	0.14	17	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
N-Nitrosodi-n-propylamine	---	---	0.011	0.05	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
N-Nitrosodiphenylamine	---	---	12	---	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9	<4.9	<4.8	<4.9	<4.8	<5.3
Pentachlorophenol	---	---	1	1	<25	<25	<25	<24	<25	<25	<25	<24	<24	<25	<24	<24	<25	<24	<26
Phenol	---	---	5800	10000	<5	<5	<4.9	<4.8	<5	<5	<4.9	<4.8	<4.8	<4.9 J	<4.9 J	<4.8	<4.9	<4.8	<5.3
Organochlorine Pesticides Analytical Results (ug/L)																			
4,4'-DDD	---	---	0.032	---	<0.08	<0.08	<0.02	<0.02	<0.019	<0.074	<0.077	<0.08	<0.08	<0.08	<0.08	<0.019	<0.019	<0.02	<0.08
4,4'-DDE	9.9	---	0.046	---	<0.08	<0.08	<0.02	**0.01 J**	<0.019	<0.074	<0.077	<0.08	<0.08	<0.08	<0.08	<0.019	<0.019	<0.02	<0.08
4,4'-DDT	---	---	0.23	0.0022	<0.08	<0.08	<0.02 J	**0.085**	<0.019	<0.074	<0.077	<0.08	<0.08	<0.08	<0.08	<0.019	<0.019	<0.02	<0.08
Aldrin	0.19	0.85	0.00092	0.00049	<0.04	<0.04	<0.01	<0.01	<0.0095	<0.037	<0.038	<0.04	<0.04	<0.04	<0.04	<0.0095	<0.0097	<0.0098	<0.04
alpha-BHC	---	---	0.0072	---	<0.04	<0.04	<0.01	<0.01	<0.0095	<0.037	<0.038	<0.04	<0.04	<0.04	<0.04	<0.0095	<0.0097	<0.0098	<0.04
alpha-Chlordane[4]	---	---	2	0.008	<0.04	<0.04	<0.01	<0.01	<0.0095	<0.037	<0.038	<0.04	<0.04	<0.04	<0.04	<0.0095	<0.0097	<0.0098	<0.04
beta-BHC	---	---	0.025	0.091	<0.04	<0.04	<0.01	<0.01	<0.0095	<0.037	<0.038	<0.04	<0.04	<0.04	<0.04	<0.0095	<0.0097	<0.0098	<0.04
delta-BHC	---	---	---	---	<0.04	<0.04	<0.01	<0.01	<0.0095	<0.037	<0.038	<0.04	<0.04	<0.04	<0.04	<0.0095	<0.0097	**0.0096 J**	<0.04
Dieldrin	---	---	0.0018	0.00052	<0.04	<0.04	<0.01	<0.01	<0.0095	<0.037	<0.038	<0.04	<0.04	<0.04	<0.04	<0.0095	<0.0097	<0.0098	<0.04
Endosulfan I[5]	---	---	100	62	<0.04	<0.04	<0.01	<0.01	<0.0095	<0.037	<0.038	<0.04	<0.04	<0.04	<0.04	<0.0095	<0.0097	**0.0027 J**	<0.04
Endosulfan II[5]	---	---	100	62	<0.04	<0.04	<0.01 J	<0.042	<0.0095	<0.037	<0.038	<0.04	<0.04	<0.04	<0.04	<0.0095	**0.0037 J**	**0.0025 J**	<0.04
Endosulfan Sulfate[6]	---	---	100	62	<0.08	<0.08	<0.02	<0.02	<0.019	<0.074	<0.077	<0.08	<0.08	<0.08	<0.08	<0.019	**0.0022 J**	**0.03**	**0.032 J**
Endrin	---	---	2	0.059	<0.08	<0.08	<0.02	<0.02	<0.019	<0.074	<0.077	<0.08	<0.08	<0.08	<0.08	<0.019	<0.019	**0.0047 J**	<0.08
Endrin Aldehyde	---	---	---	0.29	<0.08	<0.08	<0.02	<0.02	<0.019	<0.074	<0.077	**0.021 J**	**0.027 J**	<0.08	<0.08	<0.019	<0.019	<0.02	<0.08
Endrin Ketone	---	---	---	---	<0.08	<0.08	<0.02	<0.02	<0.019	<0.074	<0.077	<0.08	<0.08 J	<0.08	<0.08	<0.019	<0.019	<0.02	<0.08
gamma-BHC (Lindane)	---	---	0.2	---	<0.04	<0.04	<0.01	<0.01	<0.0095	<0.037	<0.038	<0.04	<0.04	<0.04	<0.04	<0.0095	<0.0097	<0.0098	<0.04
gamma-Chlordane[4]	---	---	2	0.008	<0.04	<0.04	<0.01	<0.01	<0.0095	<0.037	<0.038	<0.04 J	<0.04	<0.04	<0.04	<0.0095	<0.0097	<0.0098	<0.04
Heptachlor	0.11	0.49	0.4	0.00079	<0.04	<0.04	<0.01	<0.01	<0.0095	<0.037	<0.038	<0.04	<0.04	<0.04	<0.04	<0.0095	<0.0097	<0.0098	<0.04
Heptachlor Epoxide	0.7	3.1	0.2	0.00039	<0.04	<0.04	<0.01	<0.01	<0.0095	<0.037	<0.038	<0.04	<0.04	<0.04	<0.04	<0.0095	<0.0097	<0.0098	<0.04
Methoxychlor	---	---	40	40	<0.08	<0.08	<0.02	<0.02	<0.019	<0.074	<0.077	<0.08	<0.08	<0.08	<0.08	<0.019	<0.019	<0.02	<0.08
Toxaphene	---	---	3	0.0028	<2	<2	<0.5	<0.5	<0.48	<1.9	<1.9	<2	<2	<2	<2	<0.48	<0.49	<0.49	<2

Notes:

[1] April 2016 Puerto Rico Water Quality Standards Regulation for Class SG groundwater.

[2] USEPA screening level and PRWQS are for 1,3-Dichloropropene. The USEPA and PREQB have not specifically established screening levels for cis-1,3-Dichloropropene or trans-1,3-Dichloropropene.

[3] The Tapwater screening level applied to 3&4-Methylphenol is the screening level for 3-Methylphenol. This is a conservative level; it is lower than the screening level for 4-Methylphenol.

[4] USEPA screening level and PRWQS is for Chlordane. The USEPA and PREQB has not specifically established a screening level for alpha-Chlordane or gamma-Chlordane.

[5] USEPA screening level and PRWQS is for Endosulfan. USEPA and PREQB has not specifically established a screening level for Endosulfan-I and Endosulfan-II.

[6] USEPA screening level is for Endosulfan. USEPA has not specifically established a screening level for Endosulfan Sulfate.

--- USEPA and/or PREQB have not developed a screening level for this compound.

Detected values are shown in bold.

Values which exceed a Drinking Water Quality Standard (USEPA MCL, USEPA Tapwater RSL, PRWQS) and/or a USEPA Groundwater Concentration for Vapor Intrusion are shown highlighted yellow.

Sample results with elevated reporting limits, due to sample dilution from the presence of other target compounds, that are above USEPA and PREQB groundwater action levels are shaded gray.

J - Indicates an estimated value.

Table 6
Release Assessment Phase 2A Groundwater Analytical Results - March 2017

Parameter	USEPA Residential Groundwater Concentration for Vapor Intrusion	USEPA Industrial Groundwater Concentration for Vapor Intrusion	USEPA MCL or June 2017 Tap Water RSL	April 2016 PRWQS[1]	OSMW-1D 3/1/2017	OSMW-1S 3/1/2017	OSMW-2D 3/2/2017	OSMW-2S 3/2/2017	OSMW-3D 3/2/2017	OSMW-3S 3/2/2017	OSMW-4D 3/3/2017	OSMW-4S 3/3/2017	OSMW-5D 3/3/2017	OSMW-5D DUP 3/3/2017	OSMW-5S 3/3/2017	OSMW-6D 3/6/2017	OSMW-6S 3/6/2017
Volatile Organic Compounds Analytical Results (ug/L)																	
1,2-Dichloroethane	1.8	7.8	5	3.8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-Dioxane	2200	9600	0.46	---	**795**	**791**	**24.6**	**28**	**2.6**	**2.4**	**21.5 J**	**29.6**	**51.7**	**54.8**	**58.9**	**1.8**	**0.72**
Benzene	1.3	5.6	5	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	0.66	2.9	8	57	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	6	25	200	---	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Hexachlorobutadiene	0.21	0.93	0.14	4.4	<2	<2	<2	<2	<2	<2	NA	NA	NA	NA	NA	NA	NA
Methyl Tert Butyl Ether	370	1600	14	14	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
tert-Amyl Alcohol	4100	17000	6.3	---	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Vinyl Chloride	0.13	2.1	2	0.25	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Polycyclic Aromatic Hydrocarbons Analytical Results (ug/L)																	
Benzo(a)anthracene	---	---	0.03	0.038	<0.19	<0.19	<0.19	<0.2	<0.19	<0.19	<0.2	<0.19	<0.19	<0.2	<0.2	<0.19	<0.19
Naphthalene	3.2	14	0.17	0.17	<0.95	<0.96	<0.95	<0.98	<0.96	<0.95	<0.98	<0.96	<0.96	<1	<1	<0.95	<0.95
Volatile Petroleum Hydrocarbons Analytical Results (ug/L)																	
C9-C10 Aromatics (Unadj.)	---	---	5.5	---	<100	<100 J	<100	<100	<100	<100	<100 J	<100	<100	<100	<100	<100	<100
Extractable Petroleum Hydrocarbons Analytical Results (ug/L)																	
C11-C22 Aromatics (Unadj.)	---	---	5.5	---	<200	<200	<200	<200	<190	<200	<190	<190	<190	<200	<200	<200	<200
Semivolatile Organic Compounds Analytical Results (ug/L)																	
Benzaldehyde	---	---	19	---	<24	<24	<24	<25	<24	<24	<25	<24	<24	<25	<25	<24	<24
Bis(2-ethylhexyl)phthalate	---	---	6	12	<4.8	<4.8	<4.8	<4.9	<4.8	<4.8	<4.9	<4.8	<4.8	<5	<5	<4.8	<4.8
Organochlorine Pesticides Analytical Results (ug/L)																	
Dieldrin	---	---	0.0018	0.00052	<0.0095	<0.0095	<0.01	<0.01	<0.0095	<0.0098	<0.038	<0.04	<0.042	<0.04	<0.04	<0.01	<0.01

Notes:

[1] April 2016 Puerto Rico Water Quality Standards Regulation for Class SG groundwater.

--- USEPA and/or PREQB have not developed a screening level for this compound.

Detected values are shown in bold.

Values which exceed a Drinking Water Quality Standard (USEPA MCL, USEPA Tapwater RSL, PRWQS) and/or a USEPA Groundwater Concentration for Vapor Intrusion are shown highlighted yellow.

Sample results with elevated reporting limits, due to sample dilution from the presence of other target compounds, that are above USEPA and PREQB groundwater action levels are shaded gray.

J - Indicates an estimated value.

NA - Sample was not analyzed for this parameter.

Table 7
Phase 2C In-Situ Groundwater Analytical Results

Groundwater Action Level (ug/l)		*1,4-Dioxane Concentration*
USEPA MCL or June 2017 Tap Water RSL		0.46
April 2016 PRWQS[1]		---
USEPA Residential Groundwater Concentration for Vapor Intrusion		2200
USEPA Industrial Groundwater Concentration for Vapor Intrusion		9600
Sample ID	***Sample Date***	***Sample Result (ug/L)***
SEWTP-1GW	5/3/2017	186
SEWTP-1GW DUP	5/3/2017	172
SEWTP-2GW	5/11/2017	90.7
SEWTP-3GW	4/27/2017	11.4

Notes:

[1] April 2016 Puerto Rico Water Quality Standards Regulation for Class SG groundwater.

--- USEPA and/or PREQB have not developed a screening level for this compound.

Values which exceed a Drinking Water Quality Standard (USEPA MCL, USEPA Tapwater RSL, PRWQS) and/or a USEPA Groundwater Concentration for Vapor Intrusion are shown highlighted yellow.

Figures

BLDG. NUM. 37

BLDG. NUM. 42

BLDG. NUM. 43

BLDG. NUM. 30

E

E

E

D

C

B

A

SUB-STATION BLDG.

BLDG. NUM. 5

"BIOPILE"

BLDG. NUM. 18

BLDG. NUM. 6

BLDG. NUM. 6 EXPANSION

CONTRACTORS PARKING LOT

D

BLDG. NUM. 17

BLDG. NUM. 15

CONTRACTORS PARKING LOT

PARKING - C

LEGEND

A EXCAVATION AREA

0 100' North

Scale: As Shown	Date: Jul 2017
ANDERSON - MULHOLLAND & ASSOCIATES, INC. PURCHASE, NEW YORK	

Figure 1

Soil Excavation Areas
Building 5 Area

Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico

north

LEGEND

- Property Boundary
- Previously Existing Monitoring Well Location
- Release Assessment Monitoring Well Location

FORMER BRULE INCINERATOR

FRONTERA CREEK

BUILDING 5

FORMER TANK FARM

MW-9
MW-21S
MW-16
MW-19
MW-7
RW-1
MW-3
MW-12
MW-18
BR-1
BR-2
BR-3
BR-4
UP-2
UP-1
MW-13
MW-14
A-1R4
A-2R2
MW-22S
MW-5
MW-17
RA-10D
RA-10S
MW-15
S-38
S-28
S-39D
S-39S
G-1R3
S-29R
S-40S
S-40D
S-31R2
MW-23S
MW-11
E-1R
S-32
S-36
S-33
S-34
S-37
D-1R
S-30
S-41S
S-41D
MW-20D
MW-20S
S-43S
S-43D
S-42S
S-42D
S-35S
S-35D
FIRE WATER TANK
STORM WATER TANK
FIRE WATER PONDS
COOLING TOWER
GAS TK
25.12
25.10

0 100 200 300 400 500

SCALE IN FEET

Scale:	Date:
As Shown	Jul 2017

ANDERSON - MULHOLLAND & ASSOCIATES, INC.

PURCHASE, NEW YORK

Figure 2

Release Assessment Phase 1 Monitoring Well Locations

Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico

N

0 100 200 300 400 500

Graphic Scale in Feet

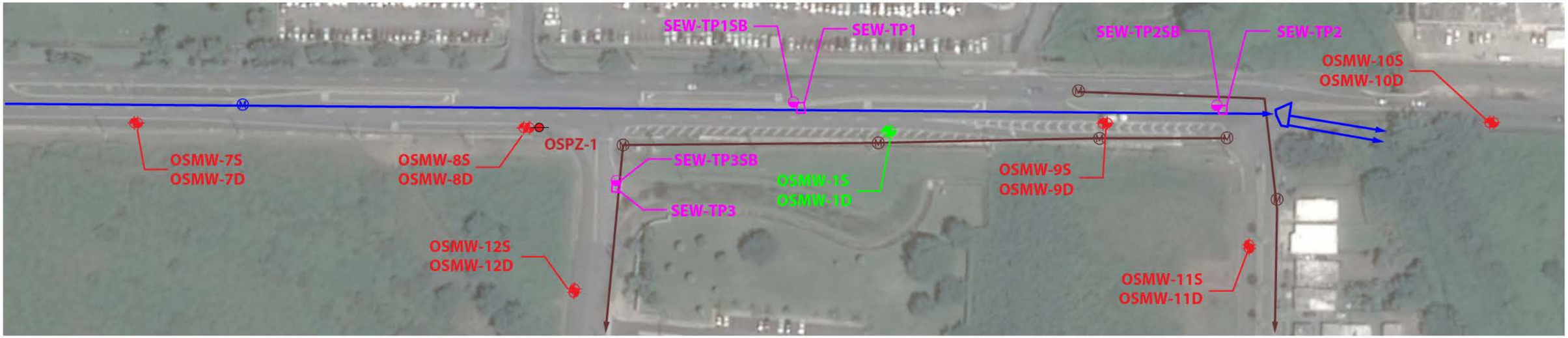
Scale:	Date:
As Shown	Jul 2017

Anderson Mulholland & Associates
Purchase, NY

Figure 3

Release Assessment Phase 2A Monitoring Well Locations

Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico



0 100 200 300 400 500

Graphic Scale in Feet

LEGEND

- PHASE 2A MONITORING WELL LOCATION
- PHASE 2C MONITORING WELL LOCATION
- PHASE 2C SHALLOW PIEZOMETER LOCATION
- PHASE 2C TEST PIT EXCAVATION
- PHASE 2C TEST PIT SOIL BORING LOCATION
- STORM SEWER AND FLOW DIRECTION
- STORM SEWER MANHOLE
- SANITARY SEWER AND FLOW DIRECTION
- SANITARY SEWER MANHOLE

N

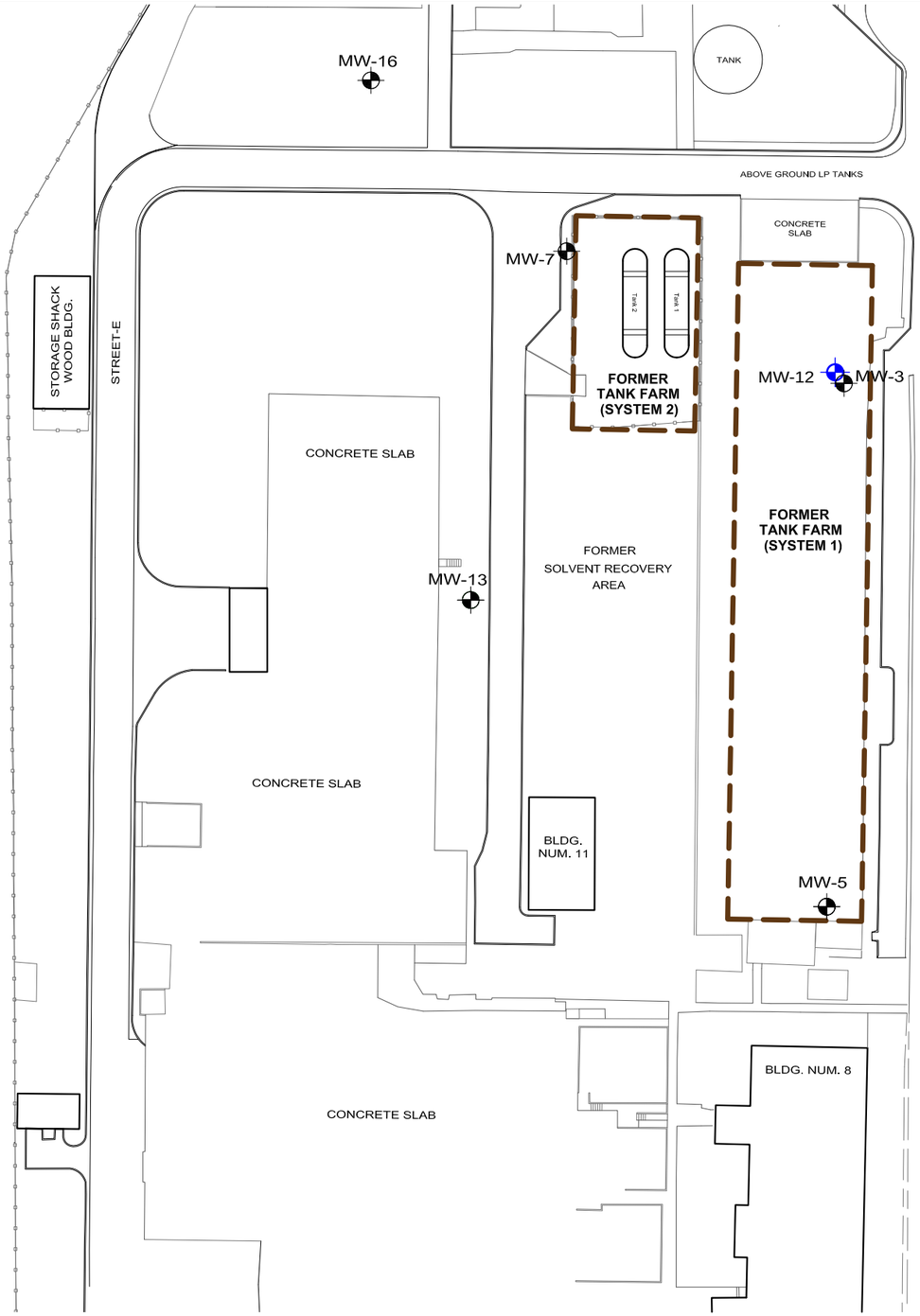
Scale:	Date:
As Shown	Jul 2017

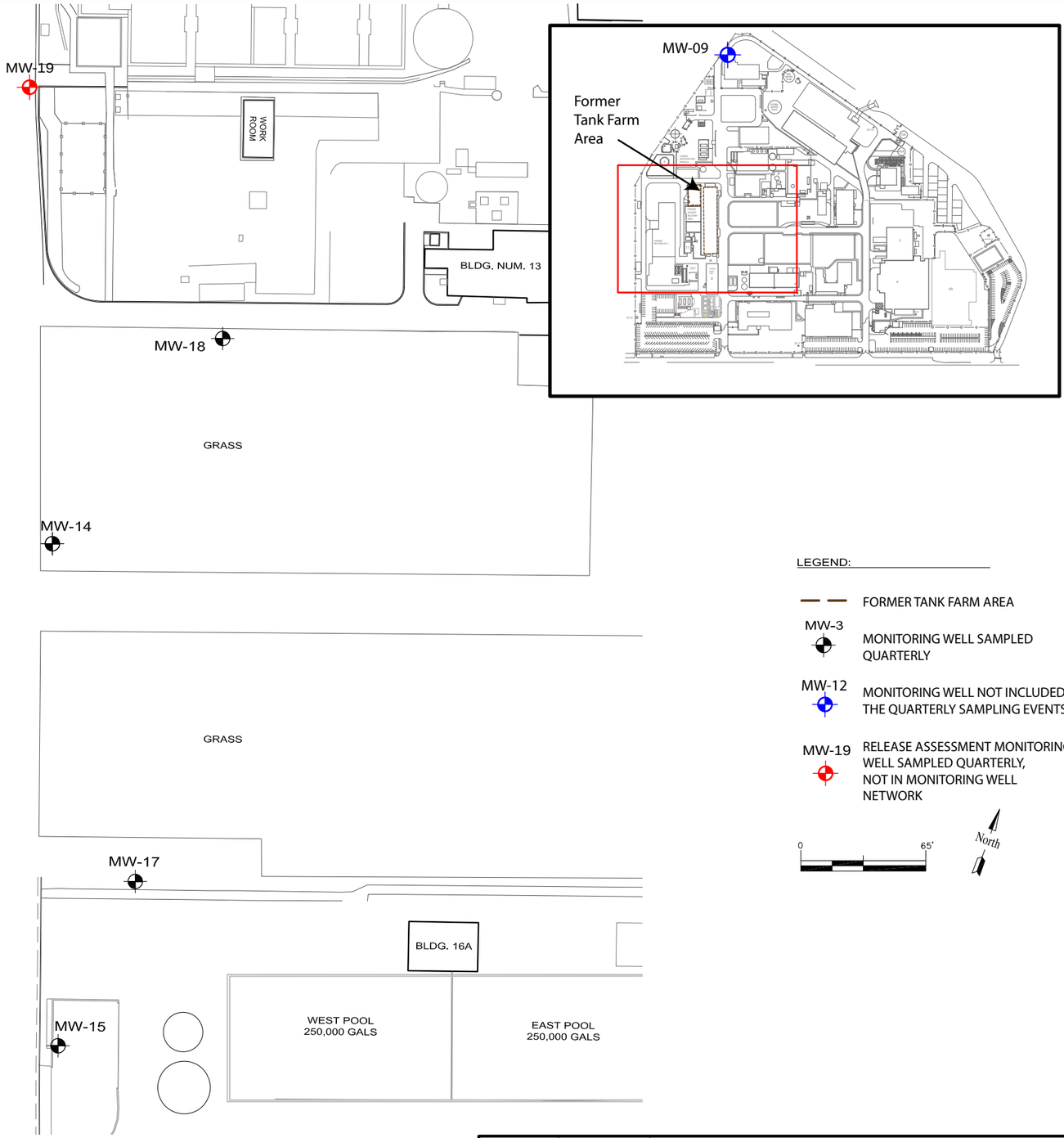
Anderson Mulholland & Associates
Purchase, NY

Figure 4

Phase 2C Test Pit and Soil Boring Locations

Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico





LEGEND:

- FORMER TANK FARM AREA
- MW-3 — MONITORING WELL SAMPLED QUARTERLY
- MW-12 — MONITORING WELL NOT INCLUDED IN THE QUARTERLY SAMPLING EVENTS
- MW-19 — RELEASE ASSESSMENT MONITORING WELL SAMPLED QUARTERLY, NOT IN MONITORING WELL NETWORK

0 65' North

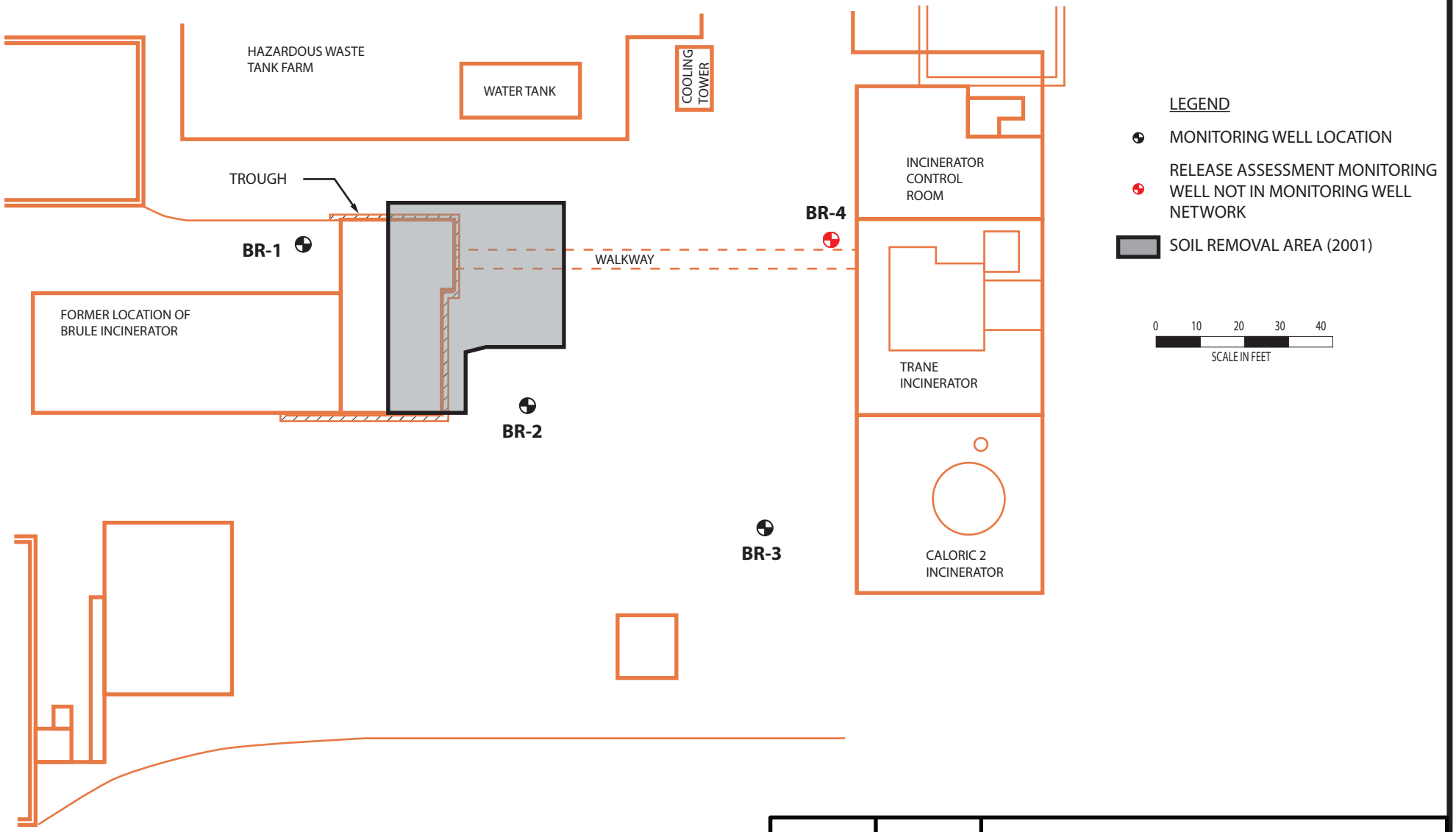
Scale	Date
As Shown	Jul 2017

ANDERSON - MULHOLLAND & ASSOCIATES, INC.
WHITE PLAINS, NEW YORK
SAN JUAN, PUERTO RICO

Figure 5

Location of Groundwater Monitoring Wells
Former Tank Farm Area

Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico



Scale:	Date:
As Shown	Jul 2017

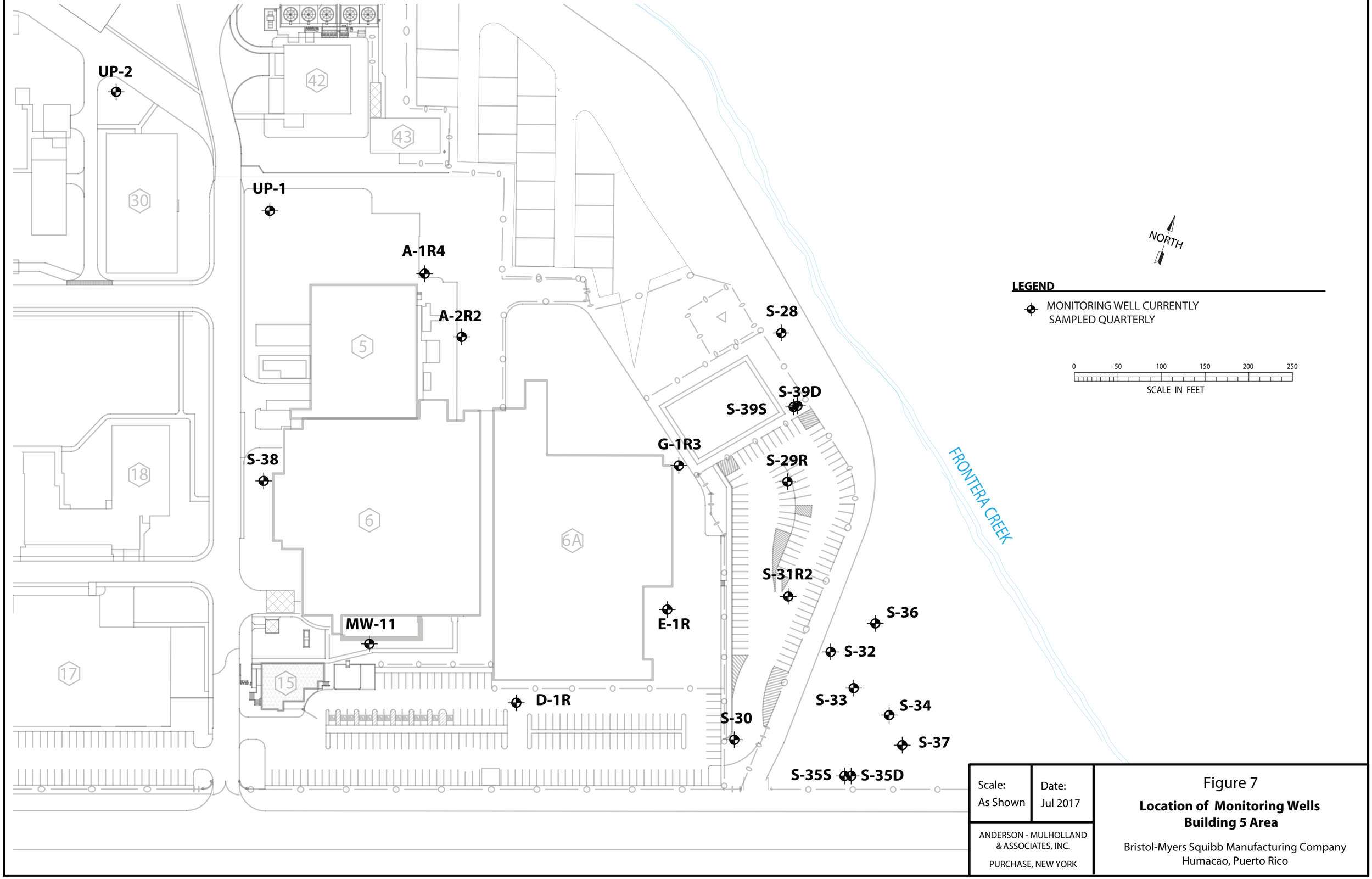
ANDERSON - MULHOLLAND & ASSOCIATES, INC.

PURCHASE, NEW YORK

Figure 6

Location of Groundwater Monitoring Wells Brule Area

Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico



Scale:	Date:
As Shown	Jul 2017

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PURCHASE, NEW YORK

Figure 7

Location of Monitoring Wells Building 5 Area

Bristol-Myers Squibb Manufacturing Company
Humacao, Puerto Rico

Attachments (on CD)

Attachment A

1st Quarter 2017 Groundwater Analytical Results and Data Validation Reports

Attachment B

1st Quarter 2017 Groundwater Field Data Sheets

Attachment C

Phase 2C Soil Boring Logs and Monitoring Well Construction Details

Project: BMS Release Assessment Phase 2C: Potential Preferential Pathway Evaluation

Location: Humacao, PR

Meas Pt/ Elev (ft amsl): TOC/16.67

Ground Elev (ft amsl): 17.01

Drilling Co: GET

Drilling Method: Direct Push/Hollow Stem Auger

Sampler / Drop: Macrocore

Borehole Dia: 7.25"

OSMW-7D

Date Completed: 4/11/2017

Date Started: 4/11/2017

Logged by: Roselynn Stuart

Reviewed by: Terry Taylor

DEPTH (ft)	PID (ppm)	SAMPLES	RECOVERY (in)	USCS Symbol	GRAPHIC LOG	SOIL DESCRIPTION	WELL
0	0.0		12/12"			(0.0-1.0') Asphalt.	
	0.0						
	0.0		12/12"			(1.0-3.0') FILL: dark gray fine sand, some silt, little gravel, trace cobble, no odor, no staining.	
	0.0						
	0.0		12/12"				
	0.0					(3.0-5.0') FILL: yellowish brown clay with trace sand and pebbles, mottled, slightly moist, no odor, no staining.	
	0.0		12/12"				
-4	0.0						
	0.0		12/12"				
	0.0			CL		(5.0-7.75') CLAY, some mottled sand, orange brown and bluish gray, medium, moist, no odor, no staining.	
	0.0						
	0.0						
	0.0						
	0.0						
	0.0		44/60"				
-8	0.0			SP		(7.75-8.5') SAND, fine, few silt, gray to rose, moist, no odor, no staining.	
						(8.5-10.0') No recovery.	
	0.0			SW		(10.0-12.5') SAND, medium to coarse, moderately graded, gray, wet at 11.0 ft, no odor, no staining.	
	0.0						
	0.0						
	0.0						
-12	0.0						
	0.0		36/60"	SM		(12.5-13.0') SAND, fine, some silt, gray, moist, no odor, no staining.	
	0.0					(13.0-15.0') No recovery.	
	0.0						
	0.0						
	0.0						

(Below TOC-13') Grout Cement with 3% bentonite

(TOC-17') 2-inch ID Sch 40 PVC Riser

(13-15') Bentonite seal

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Environmental Consultants
2700 Westchester Ave, Suite 417
Purchase, NY 10577
914-251-0400

Notes:

Depth to Saturated Soil: 11.0 ft bgl

Water Level: 3.5 ft btc

Project: BMS Release Assessment Phase 2C: Potential Preferential Pathway Evaluation

Location: Humacao, PR

Meas Pt/ Elev (ft amsl): TOC/16.67

Ground Elev (ft amsl): 17.01

Drilling Co: GET

Drilling Method: Direct Push/Hollow Stem Auger

Sampler / Drop: Macrocore

Borehole Dia: 7.25"

OSMW-7D

Date Completed: 4/11/2017

Date Started: 4/11/2017

Logged by: Roselynn Stuart

Reviewed by: Terry Taylor

DEPTH (ft)	PID (ppm)	SAMPLES	RECOVERY (in)	USCS Symbol	GRAPHIC LOG	SOIL DESCRIPTION	WELL
-16	0.0		24/60"	SW		(15.0-17.0') SAND, fine to coarse, well sorted, gray, wet, no odor, no staining.	(15-22') 20/30 Sand Pack
	0.0						
	0.0						
	0.0					(17.0-20.0') No recovery.	(17-22') Screen, 2-inch ID Sch 40 PVC, 0.020" slot size
-20	0.0			SM		(20.0-21.0') SAND, fine, some silt, gray, wet, no odor, no staining.	
	0.0			ML		(21.0-23.0') SILT with very fine sand, slightly moist, no odor, no staining.	
	0.0		60/60"				
	0.0						
	0.0						
	0.0						
-24	0.0			CL		(23.0-25.0') CLAY, bluish gray and brown mottled clay with sand (fine), dry, no odor, no staining.	(22') Bottom
	0.0					(25.0') End of boring.	

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Environmental Consultants
2700 Westchester Ave, Suite 417
Purchase, NY 10577
914-251-0400

Notes:

Depth to Saturated Soil: 11.0 ft bgl

Water Level: 3.5 ft btc

Project: BMS Release Assessment Phase 2C: Potential Preferential Pathway Evaluation

Location: Humacao, PR

Meas Pt/ Elev (ft amsl): TOC/16.77

Ground Elev (ft amsl): 17.04

Drilling Co: GET

Drilling Method: Direct Push/Hollow Stem Auger

Sampler / Drop: Macrocore

Borehole Dia: 7.25"

OSMW-7S

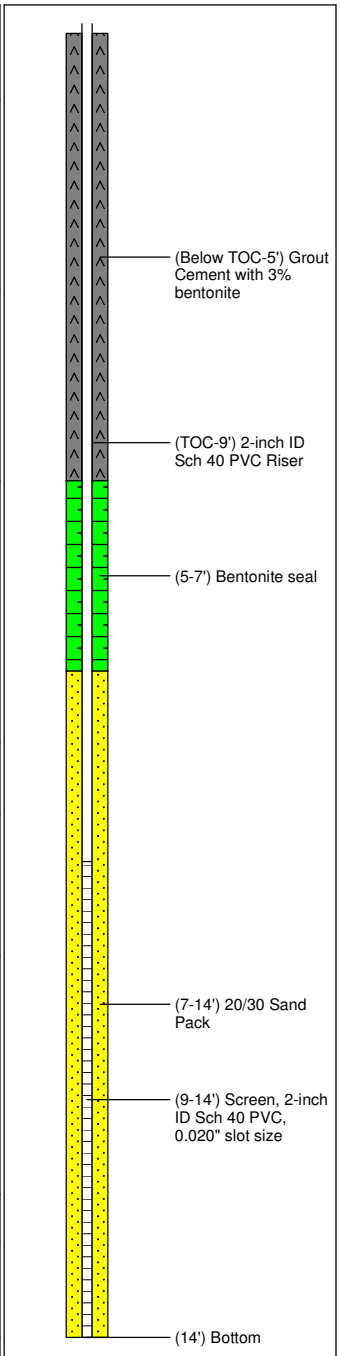
Date Completed: 4/11/2017

Date Started: 4/11/2017

Logged by: Roselynn Stuart

Reviewed by: Terry Taylor

DEPTH (ft)	PID (ppm)	SAMPLES	RECOVERY (in)	USCS Symbol	GRAPHIC LOG	SOIL DESCRIPTION
0	0.0		12/12"			(0.0-1.0') ASPHALT
	0.0					(1.0-3.0') FILL: dark gray fine sand, some silt, little gravel, trace cobble, no odor, no staining.
	0.0		12/12"			
	0.0					
	0.0		12/12"			
	0.0					(3.0-5.0') FILL: yellowish brown clay with trace sand and pebbles, mottled, slightly moist, no odor, no staining.
	0.0		12/12"			
-4	0.0					
	0.0		12/12"			
	0.0			CL		(5.0-7.75') CLAY, some mottled sand, orange brown and bluish gray, medium, moist, no odor, no staining.
	0.0					
	0.0					
	0.0					
	0.0					
	0.0		44/60"			
-8	0.0			SP		(7.75-8.5') SAND, fine, few silt, gray to rose, moist, no odor, no staining.
						(8.5-10.0') No recovery.
	0.0					(10.0-12.5') SAND, medium to coarse, moderately graded, gray, wet at 11.0 ft, no odor, no staining.
	0.0					
	0.0			SW		
	0.0					
-12	0.0		36/48"			
	0.0			SM		(12.5-13.0') SAND, fine, some silt, gray, moist, no odor, no staining.
	0.0					(13.0-14.0') No recovery.
	0.0					
	0.0					



ANDERSON MULHOLLAND & ASSOCIATES, INC.
Environmental Consultants
2700 Westchester Ave, Suite 417
Purchase, NY 10577
914-251-0400

Notes:

Depth to Saturated Soil: 11.0 ft bgl

Water Level: 3.5 ft btc

Project: BMS Release Assessment Phase 2C: Potential Preferential Pathway Evaluation

Location: Humacao, PR

Meas Pt/ Elev (ft amsl): TOC/14.72

Ground Elev (ft amsl): 15.16

Drilling Co: GET

Drilling Method: Direct Push/Hollow Stem Auger

Sampler / Drop: Macrocore

Borehole Dia: 7.25"

OSMW-8D

Date Completed: 4/19/2017

Date Started: 4/19/2017

Logged by: Roselynn Stuart

Reviewed by: Terry Taylor

DEPTH (ft)	PID (ppm)	SAMPLES	RECOVERY (in)	USCS Symbol	GRAPHIC LOG	SOIL DESCRIPTION	WELL
0	0.0					(0.0-1.0') Asphalt.	
	0.0					(1.0-3.25') FILL: gravel and clay, with silt and sand, angular coarse to fine, well graded, strong cementation, gray, dry.	
	0.0		49/60"				
	0.0						
	0.0			CL		(3.25-4.0') CLAY with some silt, few sand, light bluish gray lenses, yellowish brown, dry, medium consistency, medium plasticity, no odor, no staining.	(Below TOC-7') Grout Cement with 3% bentonite
-4						(4.0-5.0') No recovery.	
	0.0			CL		(5.0-6.75') CLAY with some silt, few sand, light bluish gray lenses, yellowish brown, dry, medium consistency, medium plasticity, no odor, no staining.	(TOC-11') 2-inch ID Sch 40 PVC Riser
	0.0						
	0.0			SC		(6.75-7.5') SAND with some interlayered gray silty clay, weak cementation, brown, dry (wet at 7 ft bgs), no odor, no staining.	
	0.0		39/60"	CL		(7.5-8.25') CLAY with some sand, medium cementation, dusky red, dry, no odor, no staining.	
-8	0.0					(8.25-10.0') No recovery.	(7-9') Bentonite seal
	0.0			CL		(10.0-11.5') CLAY with some sand, medium cementation, dusky red, dry, no odor, no staining.	
	0.0						
	0.0					(11.5-12.0') CLAY with some silt interlayered with little sand, gray, no odor, no staining.	
-12	0.0			SP		(12.25-13.25') SAND, poorly graded, subangular to subrounded, coarse, medium-grained, gray, dry, no odor, no staining.	
	0.0		51/60"				
	0.0			CL		(13.25-14.0') CLAY with silt, medium plasticity, moist, medium stiff, bluish gray, no odor, no staining.	
	0.0			SP		(14.0-15.75') SAND, subangular coarse to subrounded, medium to dense, poorly graded, gray, wet, no odor, no staining.	(9-21') 20/30 Sand Pack
	0.0						
	0.0					(15.75-16.0') No recovery.	
-16	0.0			SM		(16.0-16.75') SAND with silt, medium to fine, subangular, gray, wet, medium consistency, trace organic matter, no odor, no staining.	(11-21') Screen, 2-inch ID Sch 40 PVC, 0.020" slot size
	0.0						
	0.0					(16.75-17.25') SAND, medium-grained, subangular to subrounded, poorly graded, medium consistency, no odor, no staining.	
	0.0		60/60"	SP			

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Notes:

Depth to Saturated Soil: 7.0 ft bgl

Water Level: 3.8 ft btc

Project: BMS Release Assessment Phase 2C: Potential Preferential Pathway Evaluation

Location: Humacao, PR

Meas Pt/ Elev (ft amsl): TOC/14.72

Ground Elev (ft amsl): 15.16

Drilling Co: GET

Drilling Method: Direct Push/Hollow Stem Auger

Sampler / Drop: Macrocore

Borehole Dia: 7.25"

OSMW-8D

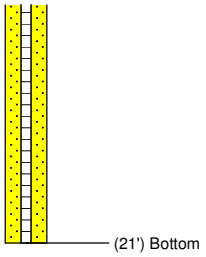
Date Completed: 4/19/2017

Date Started: 4/19/2017

Logged by: Roselynn Stuart

Reviewed by: Terry Taylor

DEPTH (ft)	PID (ppm)	SAMPLES	RECOVERY (in)	USCS Symbol	GRAPHIC LOG	SOIL DESCRIPTION	WELL
	0.0					(17.25-19.25') SAND, coarse, subangular to subrounded, poorly graded, no odor, no staining.	
						(19.25-20.0') No recovery.	
-20	0.0			CL		(20.0-24.5') CLAY, very stiff, grayish brown, no odor, no staining.	
	0.0						
	0.0						
	0.0						
	0.0						
	0.0		42/60"				
	0.0						
-24							
						(24.5-25') No recovery.	
	0.0			ML		(25.0-27.25') SILT with some clay and little sand, subangular to fine sand, light bluish gray and yellowish brown, low plasticity, moist, no odor, no staining.	
	0.0						
	0.0						
	0.0						
	0.0						
	0.0		43/60"	CL		(27.25-28.0') CLAY, pale yellow, very stiff, medium plasticity, dry, no odor, no staining.	
-28				SP		(28-28.5') SAND, medium, subangular, loose, pale yellow, dry, subangular, no odor, no staining.	
						(28.5-30.0') No recovery.	
	0.0			SC		(30.0-35.0') SAND with some interlayered clay,coarse to fine, subangular, weak to moderate cementation, pale yellow, wet to moist, no odor, no staining.	
	0.0						
	0.0						
	0.0						
-32	0.0						
	0.0		60/60"				
	0.0						
	0.0						
	0.0						
	0.0						
						(35.0') End of boring.	
-36							



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Notes:

Depth to Saturated Soil: 7.0 ft bgl

Water Level: 3.8 ft btc

Project: BMS Release Assessment Phase 2C: Potential Preferential Pathway Evaluation

Location: Humacao, PR

Meas Pt/ Elev (ft amsl): TOC/14.87

Ground Elev (ft amsl): 15.17

Drilling Co: GET

Drilling Method: Direct Push/Hollow Stem Auger

Sampler / Drop: Macrocore

Borehole Dia: 7.25"

OSMW-8S

Date Completed: 4/19/2017

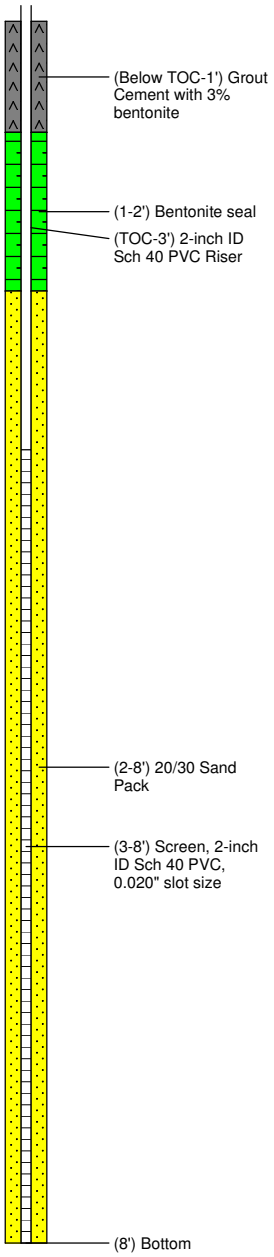
Date Started: 4/19/2017

Logged by: Roselynn Stuart

Reviewed by: Terry Taylor

DEPTH (ft)	PID (ppm)	SAMPLES	RECOVERY (in)	USCS Symbol	GRAPHIC LOG	SOIL DESCRIPTION
0	0.0					(0.0-1.0') Asphalt.
	0.0		49/60"			(1.0-3.25') FILL: gravel and clay, with silt and sand, angular coarse to fine, well graded, strong cementation, gray, dry.
	0.0					
	0.0					
	0.0					
	0.0					
	0.0			CL		(3.25-4.0') CLAY with some silt, few sand, light bluish gray lenses, yellowish brown, dry, medium consistency, medium plasticity, no odor, no staining.
-4						(4.0-5.0') No recovery.
	0.0		36/36"			(5.0-6.75') CLAY with some silt, few sand, light bluish gray lenses, yellowish brown, dry, medium consistency, medium plasticity, no odor, no staining.
	0.0					
	0.0			CL		
	0.0					
	0.0			SC		(6.75-7.5') SAND with some interlayered gray silty clay, weak cementation, brown, dry (wet at 7 ft bgs), no odor, no staining.
	0.0			CL		(7.5-8.0') CLAY with some sand, medium cementation, dusky red, dry, no odor, no staining.
-8	0.0					

WELL



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Notes:

Depth to Saturated Soil: 7.0 ft bgl

Water Level: 3.8 ft btc

Project: BMS Release Assessment Phase 2C Potential Preferential Pathway Evaluation

Location: Humacao, PR

Meas Pt/ Elev (ft amsl): TOC/14.55

Ground Elev (ft amsl): 14.77

Drilling Co: GET

Drilling Method: Direct Push/Hollow Stem Auger

Sampler / Drop: Macrocore

Borehole Dia: 7.25"

OSMW-9D

Date Completed: 4/21/2017

Date Started: 4/21/2017

Logged by: Roselynn Stuart

Reviewed by: Terry Taylor

DEPTH (ft)	PID (ppm)	SAMPLES	RECOVERY (in)	USCS Symbol	GRAPHIC LOG	SOIL DESCRIPTION	WELL
0						(0.0-1.0') Asphalt.	
						(1.0-3.0') Concrete.	
	0.0			CL		(3.0-4.0') CLAY with some silt and trace sand, bluish gray and yellowish brown, moist, stiff, medium plasticity, no odor, no staining.	
-4	0.0			SC		(4.0-5.0') SAND, fine, moderate cementation, some clay, yellowish brown, moist, no odor, no staining.	
	0.0			CL		(5.0-6.75') CLAY with some silt, few sand, light bluish gray and yellowish brown, dry, stiff, medium plasticity, no odor, no staining.	(Below TOC-12') Grout Cement with 3% bentonite
	0.0		45/60"	SW		(6.75-8.75') SAND, coarse to medium, subangular, little silt, dry (wet at 8.6 ft.), no odor, no staining.	
-8	0.0					(8.75-10.0') No recovery.	(TOC-16') 2-inch ID Sch 40 PVC Riser
	0.0			SM		(10.0-10.25') SAND coarse to fine, loose, subangular, weak cementation, some silt, gray, dry, no odor, no staining.	
						(10.25-15.0') No recovery.	
-12			0.25/60"				(12-14') Bentonite seal

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Notes:

Depth to Saturated Soil: 8.6 ft bgl

Water Level: 4.6 ft btc

Project: BMS Release Assessment Phase 2C Potential Preferential Pathway Evaluation

Location: Humacao, PR

Meas Pt/ Elev (ft amsl): TOC/14.55

Ground Elev (ft amsl): 14.77

Drilling Co: GET

Drilling Method: Direct Push/Hollow Stem Auger

Sampler / Drop: Macrocore

Borehole Dia: 7.25"

OSMW-9D

Date Completed: 4/21/2017

Date Started: 4/21/2017

Logged by: Roselynn Stuart

Reviewed by: Terry Taylor

DEPTH (ft)	PID (ppm)	SAMPLES	RECOVERY (in)	USCS Symbol	GRAPHIC LOG	SOIL DESCRIPTION	WELL
	0.0			SM		(15.0-15.5') SAND, coarse, subangular, some silt, gray, wet, odor, no staining.	
	0.0						
-16	0.0			CL		(15.5-17.75') CLAY, some silt, trace sand, dark bluish gray, moist, medium plasticity, no odor, no staining.	
	0.0						
	0.0						
	0.0		42/60"				
	0.0			SM		(17.75-18.5') SAND, fine, some interlayered silt, dark bluish gray, moist, no odor, no staining.	
						(18.5-20.0') No recovery.	
-20	0.0			CL		(20-23.75') CLAY, some silt, little sand, bluish gray, moist, soft, medium plasticity, no odor no staining. Trace of organic matter.	(14-26') 20/30 Sand Pack
	0.0						
	0.0						(16-26') Screen, 2-inch ID Sch 40 PVC, 0.020" slot size
	0.0						
	0.0						
	0.0		45/60"				
	0.0						
	0.0						
-24						(23.75-25.0') No recovery.	
	0.0			CH		(25.0-27.0') CLAY, trace sand, dark bluish gray, moist, medium to high plasticity, medium to hard, no odor, no staining.	
	0.0						
	0.0						
	0.0						
	0.0						
	0.0		39/60"	SC		(27.0-28.25') SAND coarse to fine, subangular, moderate to strong cementation, some clay, brownish yellow, white lenses, no odor, no staining.	
-28	0.0						
						(28.25-30.0') No recovery.	
						(30.0') End of boring.	(26') Bottom

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Notes:

Depth to Saturated Soil: 8.6 ft bgl

Water Level: 4.6 ft btc

Project: BMS Release Assessment Phase 2C Potential Preferential Pathway Evaluation

Location: Humacao, PR

Meas Pt/ Elev (ft amsl): TOC/14.32

Ground Elev (ft amsl): 14.77

Drilling Co: GET

Drilling Method: Direct Push/Hollow Stem Auger

Sampler / Drop: Macrocore

Borehole Dia: 7.25"

OSMW-9S

Date Completed: 4/21/2017

Date Started: 4/21/2017

Logged by: Roselynn Stuart

Reviewed by: Terry Taylor

DEPTH (ft)	PID (ppm)	SAMPLES	RECOVERY (in)	USCS Symbol	GRAPHIC LOG	SOIL DESCRIPTION	WELL
0						(0.0-1.0') Asphalt.	(Below TOC-3') Grout Cement with 3% bentonite
						(1.0-3.0') Concrete.	
	0.0			CL		(3.0-4.0') CLAY with some silt and trace sand, bluish gray and yellowish brown, moist, stiff, medium plasticity, no odor, no staining.	(TOC-7') 2-inch ID Sch 40 PVC Riser
-4	0.0			SC		(4.0-5.0') SAND, fine, moderate cementation, some clay, yellowish brown, moist, no odor, no staining.	(3-5') Bentonite seal
	0.0			CL		(5.0-6.75') CLAY with some silt, few sand, light bluish gray and yellowish brown, dry, stiff, medium plasticity, no odor, no staining.	
	0.0		45/60"	SW		(6.75-8.75') SAND, coarse to medium, subangular, little silt, dry (wet at 8.6 ft.), no odor, no staining.	(5-12') 20/30 Sand Pack
-8	0.0					(8.75-10.0') No recovery.	(7-12') Screen, 2-inch ID Sch 40 PVC, 0.020" slot size
	0.0			SM		(10.0-10.25') SAND coarse to fine, loose, subangular, weak cementation, some silt, gray, dry, no odor, no staining.	
			0.25/24"			(10.25-12.0') No recovery.	
-12							(12') Bottom

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Notes:

Depth to Saturated Soil: 8.6 ft bgl

Water Level: 4.6 ft btc

Project: BMS Release Assessment Phase 2C Potential Preferential Pathway Evaluation

Location: Humacao, PR

Meas Pt/ Elev (ft amsl): TOC/13.41

Ground Elev (ft amsl): 13.58

Drilling Co: GET

Drilling Method: Direct Push/Hollow Stem Auger

Sampler / Drop: Macrocore

Borehole Dia: 7.25"

OSMW-10D

Date Completed: 4/13/2017

Date Started: 4/13/2017

Logged by: Roselynn Stuart

Reviewed by: Terry Taylor

DEPTH (ft)	PID (ppm)	SAMPLES	RECOVERY (in)	USCS Symbol	GRAPHIC LOG	SOIL DESCRIPTION	WELL
0	0.0		12/12"	CL		(0.0-3.0') CLAY, with some sand, brown to yellowish brown, dry, medium plasticity, no odor, no staining. Roots present.	
	0.0						
	0.0		12/12"				
	0.0						
	0.0		12/12"				
	0.0			SC		(3.0-5.0') SAND, fine, moderate cementation, some clay, light yellowish brown, dry, no odor, no staining.	
-4	0.0		12/12"				
	0.0						
	0.0		12/12"				
	0.0			SP		(5.0-6.25') SAND, fine, trace silt, brown to reddish brown, dry, no odor, no staining.	(Below TOC-12') Grout Cement with 3% bentonite
	0.0					(6.25-7.75') SAND, medium, brown to grayish brown, moist, no odor, no staining.	
	0.0						
	0.0						
	0.0		36/60"			(7.75-8.0') SAND, fine, gray, moist, no odor, no staining.	
-8						(8.0-10.0') No recovery.	(TOC-16') 2-inch ID Sch 40 PVC Riser
	0.0			SW		(10.0-11.25') SAND, very fine to fine, gray, no odor, no staining.	
	0.0						
	0.0			SP		(11.5-12.0') SAND, medium to coarse, wet, gray, no odor, no staining.	
-12	0.0					(12.0-12.5') No recovery.	
	0.0		45/60"	OL		(12.5-13.5') SILT, with organics, gray, no odor, no staining.	(12-14') Bentonite

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Notes:

Depth to Saturated Soil: 10.5 ft bgl

Water Level: 5.2 ft btc

Project: BMS Release Assessment Phase 2C Potential Preferential Pathway Evaluation

Location: Humacao, PR

Meas Pt/ Elev (ft amsl): TOC/13.41

Ground Elev (ft amsl): 13.58

Drilling Co: GET

Drilling Method: Direct Push/Hollow Stem Auger

Sampler / Drop: Macrocore

Borehole Dia: 7.25"

OSMW-10D

Date Completed: 4/13/2017

Date Started: 4/13/2017

Logged by: Roselynn Stuart

Reviewed by: Terry Taylor

DEPTH (ft)	PID (ppm)	SAMPLES	RECOVERY (in)	USCS Symbol	GRAPHIC LOG	SOIL DESCRIPTION	WELL
	0.0						seal
	0.0					(13.5-15.0') No recovery.	
	0.0			CL		(15.0-17.5') CLAY, with silt and very fine sand, no odor, no staining.	
-16	0.0						
	0.0						
	0.0						
	0.0		51/60"	SM		(17.5-17.75') SAND, very fine, with silt, wet, gray, no odor, no staining.	(14-21') 20/30 Sand Pack
	0.0			CL		(17.75-19.25') CLAY, with silt and sand, soft, no odor, no staining.	
	0.0						(16-21') Screen, 2-inch ID Sch 40 PVC, 0.020" slot size
	0.0					(19.25-20.0') No recovery.	
-20	0.0			CL		(20.0-22.25') CLAY, yellowish brown with light bluish gray lenses, hard, medium plasticity, no odor, no staining.	
	0.0						
	0.0						
	0.0						
	0.0		27/60"			(22.25-25.0') No recovery.	(21') Bottom
-24							
						(25.0') End of boring.	

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Notes:

Depth to Saturated Soil: 10.5 ft bgl

Water Level: 5.2 ft btc

Project: BMS Release Assessment Phase 2C Potential Preferential Pathway Evaluation

Location: Humacao, PR

Meas Pt/ Elev (ft amsl): TOC/13.60

Ground Elev (ft amsl): 13.66

Drilling Co: GET

Drilling Method: Direct Push/Hollow Stem Auger

Sampler / Drop: Macrocore

Borehole Dia: 7.25"

OSMW-10S

Date Completed: 4/13/2017

Date Started: 4/13/2017

Logged by: Roselynn Stuart

Reviewed by: Terry Taylor

DEPTH (ft)	PID (ppm)	SAMPLES	RECOVERY (in)	USCS Symbol	GRAPHIC LOG	SOIL DESCRIPTION	WELL
0	0.0		12/12"	CL		(0.0-3.0') CLAY, with some sand, brown to yellowish brown, dry, medium plasticity, no odor no staining. Roots present.	(Below TOC-4') Grout Cement with 3% bentonite
	0.0						
	0.0		12/12"				
	0.0						
	0.0		12/12"				
	0.0			SC		(3.0-5.0') SAND, fine, moderate cementation, some clay, light yellowish brown, dry, no odor, no staining.	(TOC-8') 2-inch ID Sch 40 PVC Riser
-4	0.0		12/12"				
	0.0						(4-6') Bentonite seal
	0.0		12/12"				
	0.0			SP		(5.0-6.25') SAND, fine, trace silt, brown to reddish brown, dry, no odor, no staining.	
	0.0					(6.25-7.75') SAND, medium, brown to grayish brown, moist, no odor, no staining.	
	0.0						
	0.0		36/60"			(7.75-8.0') SAND, fine, gray, moist, no odor, no staining.	
-8						(8.0-10.0') No recovery.	(6-13') 20/30 Sand Pack
	0.0			SW		(10.0-11.25') SAND, very fine to fine, gray, no odor, no staining.	(8-13') Screen, 2-inch ID Sch 40 PVC, 0.020" slot size
	0.0						
	0.0		36/36"	SP		(11.5-12.0') SAND, medium to coarse, wet, gray, no odor, no staining.	
-12	0.0					(12.0-12.5') No recovery.	
				OL		(12.5-13.0') SILT, with organics, gray, no odor, no staining.	(13') Bottom

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Notes:

Depth to Saturated Soil: 10.5 ft bgl

Water Level: 5.2 ft btc

Project: BMS Release Assessment Phase 2C Potential Preferential Pathway Evaluation

Location: Humacao, PR

Meas Pt/ Elev (ft amsl): TOC/14.60

Ground Elev (ft amsl): 14.81

Drilling Co: GET

Drilling Method: Direct Push/Hollow Stem Auger

Sampler / Drop: Macrocore

Borehole Dia: 7.25"

OSMW-11D

Date Completed: 4/17/2017

Date Started: 4/17/2017

Logged by: Roselynn Stuart

Reviewed by: Terry Taylor

DEPTH (ft)	PID (ppm)	SAMPLES	RECOVERY (in)	USCS Symbol	GRAPHIC LOG	SOIL DESCRIPTION	WELL
0	0.0		12/12"			(0.0-0.25') Asphalt/concrete.	
	0.0					(0.25-4.0') FILL: clay with fine sand, grayish brown, dry, medium to stiff, medium plasticity, no odor, no staining.	
	0.0		12/12"				
	0.0						
	0.0		12/12"				
	0.0						
	0.0		12/12"				
-4	0.0			CL		(4.0-7.75') CLAY, some silt, few sand, brownish yellow with light bluish gray lenses, dry (silt/sand wet at 7.1 ft), medium plasticity, no odor, no staining.	
	0.0		12/12"				
	0.0						
	0.0						
	0.0						
	0.0						
	0.0						
	0.0						
	0.0		42/60"				
-8	0.0			SP		(7.75-8.5') SAND, coarse, subangular to subrounded, light brownish yellow with red lenses, wet, no odor, no staining.	
	0.0					(8.5-10.0') No recovery.	(Below TOC-18') Grout Cement with 3% bentonite
	0.0			SP		(10.0-11.5') SAND, coarse, subangular to subrounded, light brownish yellow with red lenses, wet, no odor, no staining.	(TOC-22') 2-inch ID Sch 40 PVC Riser
	0.0					(11.5-12.25') SAND, coarse, subrounded, gray, wet, no odor, no staining.	
-12	0.0			ML		(12.25-13.5') SILT, gray, moist, very stiff, low to medium plasticity, no odor, no staining.	
	0.0		60/60"				
	0.0						
	0.0					(13.5-15.0') CLAY, some interlayered sand, gray, moist, low plasticity, no odor, no staining.	
	0.0						
	0.0						
	0.0			CL		(15.0-17.5') CLAY, some silt and little sand, gray, moist, low to medium plasticity, no odor, no staining.	
-16							

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Notes:

Depth to Saturated Soil: 7.0 ft bgl

Water Level: 5.5 ft btc

Project: BMS Release Assessment Phase 2C Potential Preferential Pathway Evaluation

Location: Humacao, PR

Meas Pt/ Elev (ft amsl): TOC/14.60

Ground Elev (ft amsl): 14.81

Drilling Co: GET

Drilling Method: Direct Push/Hollow Stem Auger

Sampler / Drop: Macrocore

Borehole Dia: 7.25"

OSMW-11D

Date Completed: 4/17/2017

Date Started: 4/17/2017

Logged by: Roselynn Stuart

Reviewed by: Terry Taylor

DEPTH (ft)	PID (ppm)	SAMPLES	RECOVERY (in)	USCS Symbol	GRAPHIC LOG	SOIL DESCRIPTION	WELL
-16	0.0						
	0.0						
	0.0						
	0.0		39/60"	ML		(17.5-18.25') SILT, little sand, light dusky red, wet, low plasticity, no staining, no odor.	
						(18.25-20.0') No recovery.	(18-20') Bentonite seal
-20	0.0			CL		(20.0-25.0') CLAY with some silt and little sand, gray, moist, soft to medium, medium plasticity, no odor, no staining. Little organic matter present,	
	0.0						
	0.0						
	0.0						
	0.0		60/60"				
	0.0						
	0.0						(20-27') 20/30 Sand Pack
-24	0.0						
	0.0						(22-27') Screen, 2-inch ID Sch 40 PVC, 0.020" slot size
	0.0					(25.0-26.0') CLAY with some silt and little sand, some mottling, gray, moist, soft, medium plasticity, no odor, no staining.	
	0.0					(26.0-28.0') CLAY with some silt and little sand, some mottling, gray, moist, stiff, medium plasticity, no odor, no staining.	
	0.0						
	0.0						
	0.0		36/60"				(27') Bottom
-28						(28.0-30.0') No recovery.	
						(30.0') End of boring.	

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Notes:

Depth to Saturated Soil: 7.0 ft bgl

Water Level: 5.5 ft btc

Project: BMS Release Assessment Phase 2C Potential Preferential Pathway Evaluation

Location: Humacao, PR

Meas Pt/ Elev (ft amsl): TOC/14.59

Ground Elev (ft amsl): 14.73

Drilling Co: GET

Drilling Method: Direct Push/Hollow Stem Auger

Sampler / Drop: Macrocore

Borehole Dia: 7.25"

OSMW-11S

Date Completed: 4/17/2017

Date Started: 4/17/2017

Logged by: Roselynn Stuart

Reviewed by: Terry Taylor

DEPTH (ft)	PID (ppm)	SAMPLES	RECOVERY (in)	USCS Symbol	GRAPHIC LOG	SOIL DESCRIPTION	WELL
0	0.0		12/12"			(0.0-0.25') Asphalt/concrete.	
	0.0					(0.25-4.0') FILL: clay with fine sand, grayish brown, dry, medium to stiff, medium plasticity, no odor, no staining.	(Below TOC-2') Grout Cement with 3% bentonite
	0.0		12/12"				
	0.0						
	0.0		12/12"				
	0.0						(2-4') Bentonite seal
	0.0		12/12"				(TOC-6') 2-inch ID Sch 40 PVC Riser
-4	0.0						
	0.0		12/12"			(4.0-7.75') CLAY, some silt, few sand, brownish yellow with light bluish gray lenses, dry (silt/sand wet at 7.1 ft), medium plasticity, no odor, no staining.	
	0.0						
	0.0			CL			
	0.0						
	0.0						
	0.0						
	0.0		42/60"				(4-11') 20/30 Sand Pack
-8	0.0			SP		(7.75-8.5') SAND, coarse, subangular to subrounded, light brownish yellow with red lenses, wet, no odor, no staining.	
	0.0					(8.5-10.0') No recovery.	(6-11') Screen, 2-inch ID Sch 40 PVC, 0.020" slot size
	0.0			SP		(10.0-11.0') SAND, coarse, subangular to subrounded, light brownish yellow with red lenses, wet, no odor, no staining.	
	0.0		12/12"				
	0.0						(11') Bottom
-12							

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2700 Westchester Ave, Suite 417
Purchase, NY 10577
914-251-0400

Notes:

Depth to Saturated Soil: 7.0 ft bgl

Water Level: 5.5 ft btc

Project: BMS Release Assessment Phase 2C Potential Preferential Pathway Evaluation

Location: Humacao, PR

Meas Pt/ Elev (ft amsl): TOC/17.18

Ground Elev (ft amsl): 17.50

Drilling Co: GET

Drilling Method: Direct Push/Hollow Stem Auger

Sampler / Drop: Macrocore

Borehole Dia: 7.25"

OSMW-12D

Date Completed: 4/20/2017

Date Started: 4/20/2017

Logged by: Roselynn Stuart

Reviewed by: Terry Taylor

DEPTH (ft)	PID (ppm)	SAMPLES	RECOVERY (in)	USCS Symbol	GRAPHIC LOG	SOIL DESCRIPTION	WELL
0	0.0		51/60"			(0.0-3.25') FILL: sand and gravel, some clay, brown, dry, no odor, no staining.	
	0.0						
	0.0						
	0.0						
	0.0						
	0.0						
	0.0			CL		(3.25-4.25') CLAY, brown, dry, hard, low plasticity, no odor, no staining.	
-4	0.0					(4.25-5.0') No recovery.	
	0.0			CH		(5.0-6.5') CLAY, yellowish brown with light bluish gray lenses, dry, stiff, high plasticity, no odor, no staining.	
	0.0						
	0.0						
	0.0			SC		(6.5-8.25') SAND, coarse to medium, subangular, moderate cementation, some clay, yellowish brown with dusky red lenses, dry, no odor, no staining.	
	0.0		39/60"				
-8	0.0					(8.25-10.0') No recovery.	(Below TOC-16') Grout Cement with 3% bentonite
	0.0			SC		(10.0-10.5') SAND, coarse to medium, subangular, moderate cementation, some clay, yellowish brown with dusky red lenses, dry, no odor, no staining.	(TOC-20') 2-inch ID Sch 40 PVC Riser
	0.0					(10.5-14.0') SAND, coarse, subangular to subrounded, loose, light gray to gray with dusky red lenses, wet, no odor, no staining.	
	0.0		24/24"				
	0.0						
-12	0.0			SP			
	0.0						
	0.0						
	0.0						
	0.0		39/48"				
	0.0			SW		(14.0-15.25') SAND, fine to medium, dusky red, wet, no odor, no staining.	

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Notes:

Depth to Saturated Soil: 7 ft bgl

Water Level: 2.9 ft btc

Project: BMS Release Assessment Phase 2C Potential Preferential Pathway Evaluation

Location: Humacao, PR

Meas Pt/ Elev (ft amsl): TOC/17.18

Ground Elev (ft amsl): 17.50

Drilling Co: GET

Drilling Method: Direct Push/Hollow Stem Auger

Sampler / Drop: Macrocore

Borehole Dia: 7.25"

OSMW-12D

Date Completed: 4/20/2017

Date Started: 4/20/2017

Logged by: Roselynn Stuart

Reviewed by: Terry Taylor

DEPTH (ft)	PID (ppm)	SAMPLES	RECOVERY (in)	USCS Symbol	GRAPHIC LOG	SOIL DESCRIPTION	WELL
	0.0						
						(15.25-16.0') No recovery.	
-16	0.0			SC		(16.0-19.25') SAND, fine to coarse, subangular, loose, some interlayered clay and trace silt, light gray to dark gray, wet, no odor, no staining.	(16-18') Bentonite seal
	0.0						
	0.0						
	0.0						
	0.0		39/48"				
	0.0						
	0.0						
						(19.25-20.0') No recovery.	
-20	0.0			SP		(20.0-23.5') SAND, coarse, subangular, light gray to dark gray, wet, no odor, no staining.	(18-25') 20/30 Sand Pack
	0.0						
	0.0						
	0.0						
	0.0		42/48"				
	0.0						
	0.0						(20-25') Screen, 2-inch ID Sch 40 PVC, 0.020" slot size
	0.0						
						(23.5-24.0') No recovery.	
-24	0.0			CL		(24.0-25.75) CLAY, little sand, bluish gray, moist, medium plasticity, no odor, no staining.	
	0.0						
	0.0						
	0.0						
	0.0		39/48"				
	0.0			SC		(25.75-27.25') SAND, fine to coarse, subangular, dense, moderate cementation, some interlayered clay and trace silt, gray, wet, no odor, no staining.	
	0.0						
	0.0						(25') Bottom
						(27.25-28.0') No recovery.	
-28						(28.0') End of boring.	

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Notes:

Depth to Saturated Soil: 7 ft bgl

Water Level: 2.9 ft btc

Project: BMS Release Assessment Phase 2C Potential Preferential Pathway Evaluation

Location: Humacao, PR

Meas Pt/ Elev (ft amsl): TOC/17.21

Ground Elev (ft amsl): 17.44

Drilling Co: GET

Drilling Method: Direct Push/Hollow Stem Auger

Sampler / Drop: Macrocore

Borehole Dia: 7.25"

OSMW-12S

Date Completed: 4/20/2017

Date Started: 4/20/2017

Logged by: Roselynn Stuart

Reviewed by: Terry Taylor

DEPTH (ft)	PID (ppm)	SAMPLES	RECOVERY (in)	USCS Symbol	GRAPHIC LOG	SOIL DESCRIPTION	WELL
0	0.0		51/60"			(0.0-3.25') FILL: sand and gravel, some clay, brown, dry, no odor, no staining.	(Below TOC-6') Grout Cement with 3% bentonite
	0.0						
	0.0						
	0.0						
	0.0						
	0.0						
	0.0			CL		(3.25-4.25') CLAY, brown, dry, hard, low plasticity, no odor, no staining.	
-4	0.0					(4.25-5.0') No recovery.	
	0.0			CH		(5.0-6.5') CLAY, yellowish brown with light bluish gray lenses, dry, stiff, high plasticity, no odor, no staining.	(TOC-10') 2-inch ID Sch 40 PVC Riser
	0.0						
	0.0						
	0.0			SC		(6.5-8.25') SAND, coarse to medium, subangular, moderate cementation, some clay, yellowish brown with dusky red lenses, dry, no odor, no staining.	(6-8') Bentonite seal
	0.0		39/60"				
-8	0.0					(8.25-10.0') No recovery.	
	0.0			SC		(10.0-10.5') SAND, coarse to medium, subangular, moderate cementation, some clay, yellowish brown with dusky red lenses, dry, no odor, no staining.	
	0.0						
	0.0		24/24"			(10.5-14.0') SAND, coarse, subangular to subrounded, loose, light gray to gray with dusky red lenses, wet, no odor, no staining.	(8-15') 20/30 Sand Pack
	0.0						
-12	0.0			SP			(10-15') Screen, 2-inch ID Sch 40 PVC, 0.020" slot size
	0.0						
	0.0		36/36"				
	0.0						
	0.0			SW		(14.0-15.0') SAND, fine to medium, dusky red, wet, no odor, no staining.	
	0.0						(15') Bottom
-16							

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Notes:

Depth to Saturated Soil: 7 ft bgl

Water Level: 2.9 ft btc